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PERSONALITY FUNCTIONING AS RELATED TO ACADEMIC AND
CLINICAL PERFORMANCE IN FRESHMEN
NURSING STUDENTS

BY



GLORIA N. KARPIAK

A THESIS

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FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Personality Functioning as Related to Academic and Clinical Performance in Freshmen Nursing Students" submitted by Gloria N. Karpiak in partial fulfillment of the requirements for the degree of Master of Education.

Date

June 13, 1972

ABSTRACT

This study was conducted to investigate the personality constructs of need level and perceptual preference among a group of nursing freshmen, based upon Mogar's psychological theory of education. The personality findings were related to academic and clinical performance variables.

Seventy-five students registered in a hospital based program in nursing were administered two personality tests, the Personal Orientation Inventory, and the Myers-Briggs Type Indicator. Characteristics measured by these tests were compared to marks obtained in nursing theory, sociology, psychology, microbiology, and clinical nursing performance. The data were analyzed by the establishment of confidence intervals around mean scores, and by analysis of variance.

On the dimension of perceptual preference, the nursing group was characterized by the Extroversion-Feeling-Sensing-Judging personality type. On the dimension of need level, the nursing students were found to be predominantly non-self-actualized; however, they scored significantly higher on this dimension than did the normative population.

The exploration of personality type in relation to academic and clinical achievement variables revealed that students identified as introverted obtained significantly higher marks in Sociology than those identified as extroverted. Similarly, nursing students identified as self-actualized obtained significantly higher marks in Sociology than those not so identified. Those preferring Judging versus Perception scored significantly higher

in Microbiology.

The personality findings revealed an approach to education proposed by Mogar, the Congruity approach, to be most effective for the majority of this group of nursing students.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

Nursing is rapidly increasing in complexity, and nursing education is faced with the challenge of accomodationg to many changes. Much has been written about the need for reappraising the goals and educational methods of schools of nursing. In planning the education of nurses to meet society's changing needs, educators are increasingly questioning traditional methods. The variety of teaching methods and techniques reported regularly in professional journals reveals the endeavour to improve the effectiveness of instructional approaches used in nursing. In describing program goals for 1971, the National League for Nursing has given priority to the examination of the relevance of nursing's educational patterns for attracting and preparing personnel (1971).

The problems of student selection and planning of educational experiences are of particular concern to nursing educators. It is increasingly acknowledged that nursing requires practitioners who display a wide range of personal characteristics, abilities, and interests. This has resulted in a renewed interest in examining the individual in nursing, as well as the educational methods used in preparation of a graduate nurse.

Re-examining the practitioner in nursing relates directly to a concern to prepare nurses who are able to provide the health care required by a changing society. An aspect of this concern involves a recognition of the need to prepare nurses who are adaptable,

flexible, and able to provide individualized care.

Personality factors have often been neglected in favor of academic achievement in selecting the nursing candidate. However, research has increasingly identified the need for study of factors which supplement academic aptitude in nursing achievement. The possibility has been raised that the applicant may be selected at present because she is expected to perform well in nursing school, rather than because of her potential for fulfilling the actual role of a graduate nurse (Bailey, 1971).

Selection and educational procedures contribute importantly to a profession's maintenance and growth. Periodic re-examination of these procedures in keeping with the changing goals and objectives of the profession is therefore necessary. The present focus on academic performance in selection procedures may have resulted in lack of sufficient emphasis on personal characteristics most important for nursing performance. Also, various educational approaches adopted may differ in effectiveness according to the particular characteristics of those selected for nursing.

The present study will attempt to investigate both the perceptual preferences and need levels of a population of nursing students and to explore these characteristics as they relate to nursing success. Both academic and clinical performance measures will be used to define success in the nursing program. The implications of the findings will be explored as they relate to nursing education.

Efforts to predict achievement among nursing students have been only moderately successful. Previous research indicates

that theory grades are more accurately predicted than practice grades (Taylor, 1963). Relatively few studies have investigated the factors correlated with clinical performance in nursing schools. Lavin (1965), reported that ability and cognitive measures are the best predictors of academic success in nursing schools. He further suggested, however, that prediction might be improved by the use of measures such as creativity, attitude, and personality inventories. Adams and Klein (1970), evaluating the assessment of personality characteristics of nursing students, concluded that continued research into personality variables is necessary with a wider range of instruments. Brumbough (1960), summarized the reason for this interest in students when he said:

The more that is known about students-their characteristics, their experiences, their success...the better can an institution formulate and evaluate its policies, programs, and procedures (p. 9).

The growing interest in both the individual practitioner, and the nursing educational methods employed, suggests a closer examination of the relationship between personality characteristics and planning of educational experiences.

Reflecting back on this problem, in the present study the following questions were examined:

1. What are the personality characteristics of nursing students in the first year of a nursing program?

(a) Do students entering nursing school exhibit a distinct pattern of need levels?

(b) Do students entering nursing school exhibit distinct perceptual preferences?

2. In the nursing education program, is there a relationship between personality characteristics of beginning nursing students and,

(a) academic achievement

(b) clinical performance achievement?

3. If distinctive personality characteristics of nursing students can be identified, what are the implications for selection and teaching procedures in nursing education?

Summary

The personality constructs related to need level and perceptual preference will be measured among a group of first year nursing students. Further knowledge regarding personality characteristics of students during their first year of nursing education may have important implications for selection procedures in schools of nursing. This knowledge could also assist nursing educators in developing educational techniques which both foster the potential of the students and further the goals of the nursing profession.

The psychological theory of education proposed by Mogar (1969), states that the need level and perceptual preference of an individual determine, to a large extent, the effectiveness of a particular educational approach for that individual. The theory also explores alternative educational techniques which meet the particular needs of an individual or group. Mogar's theory will provide the framework for the present investigation of need level and perceptual preference among a population of nursing students. The development and rationale of this theory will be discussed in

the following chapter.

CHAPTER II

THEORETICAL FRAMEWORK

Mogar's psychological theory of education, (1969), provides the basis for the present study. This theory states that dominant need level and perception-judgment preference are important variables in determining the impact of a given educational process on a given individual. He maintains that we are still largely unaware of individual differences in educability, and of the value of different teaching methods.

Mogar's theory is based largely on models of Maslow (1962), and Jung (1923). Since theories proposed by these men contribute significantly to Mogar's theory, they will now be reviewed.

JUNG'S PERSONALITY THEORY

C.G. Jung's personality typology (1923), has contributed much to present-day understanding and measurement of personality variables. Jung formulated a theory of personality types based on the two attitudes of introversion and extroversion and four psychological functions: thinking, feeling, sensing, and intuition.

A particular personality type results when one of the attitudes or functions is more fully developed than the others. For example, when the function of thinking is most fully developed in a person, that person is a thinking type. The individual with a preference for extroversion is orientated toward the

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external, objective world; the introverted person is oriented toward the inner, subjective world. These two orientations are both present in the personality but ordinarily one of them is dominant and the other is subordinate. Similarly, one of the four functions of thinking, feeling, sensing, and intuition is preferred, and is therefore called the superior function, leaving the three others to function in an auxiliary capacity (Hall and Lindzey, 1970).

Although he states that each of the four functions is possessed by everyone, Jung speaks of the consciousness of a function only when the life of the individual is mainly ruled by it. He defines thinking as the function of intellectual cognition, forming logical conclusions; feeling is a function of subjective evaluation leading to acceptance or rejection. Thinking and feeling are two ways of judging. The function of sensation is defined as perception by means of the sense organs; intuition is perception by way of the unconscious (Jung, 1949, p. 457).

Jung's theory postulates that much apparently random variation in human behavior is actually quite orderly and consistent. This variation is due to basic differences in the way people prefer to use perception and judgment. Observable behavior is directly affected by the processes of perception and judgment since perception determines what an individual sees in a situation, and judgment determines what he decides to do about it (Myers, 1962, p. 51). The difference between perception and judgment is described in the following manner:

In the judging attitude, in order to come to a conclusion, perception must be shut off for the time

being. The evidence is all in...One now arrives at a verdict and gets things settled. Conversely, in the perceptive attitude one shuts off judgment for the time being...New developments will occur. It is much too soon to do anything irrevocable. (Myers, 1962, p. 58).

A preference between the two ways of perceiving and judging is developed in childhood, depending upon needs and environmental demands and opportunities. Individuals then develop along divergent lines, participating in activities which utilize their preferred process.

MASLOW'S THEORY OF PERSONALITY

Maslow's views regarding personality are based on the philosophical assumption that the nature of man is essentially good. He has developed a theory of human motivation based largely on investigations of healthy and creative individuals.

Differentiating between basic needs and metaneeds, he suggests a hierarchic pattern exists regarding the order in which an individual's strivings or needs demand satisfaction. Once the basic (or deficiency) needs, such as hunger and affection are satisfied, the individual reaches the need level of self-actualization, where metaneeds (or growth needs), such as justice, goodness, and beauty become important. The basic needs, however, begin at the physiological level and move up through needs for safety, love, esteem to the need for self-actualization.

The physiological needs of hunger, thirst, and sex form the starting point in Maslow's motivational theory. "For the man who is extremely and dangerously hungry, no other interests exist but

food" (Maslow, 1954, p. 82). It is only when this want for food is satisfied that other needs gain prominence.

Man's safety needs become significant once physiological needs are satisfied. These include comfort from heat and cold, protection against criminal assault and illness, and job security.

The needs for love and belongingness become prominent once the physiological and safety needs are gratified.

Self-esteem, recognition, and power concern the individual after the three groups of needs mentioned above are satisfied at some minimal level. Satisfaction of these esteem needs leads to feelings of self-confidence, worth and capability which prepare the individual for creative growth.

Self-actualization, or self-fulfillment, is viewed by Maslow as a goal sought by persons who have achieved a certain level of satisfaction of other needs. Each person's needs in this regard are individually unique. Maslow writes:

A musician must make music, an artist must paint,
a poet must write...What a man can be, he must be.
This need we may call self-actualization (1954, p. 91).

Studying healthy and creative individuals, Maslow attempted to determine the qualities which contributed to their self-actualization. The criterion of selection of the study population implied gratification of such basic needs as food, safety, belongingness and esteem. The following characteristics of the self-actualizing person were identified (1954):

1. More efficient perception of reality and more comfort with it.
2. Acceptance of self, others and nature.

3. Spontaneity.
4. Problem-centered, focused on problem outside themselves.
5. The quality of detachment, the need for privacy.
6. Autonomy, independence of culture and environment.
7. Continued freshness of appreciation.
8. The mystic experience; the oceanic feeling, self-transcendence.
9. Gemeinschaftsgefühl-elderly-brother attitude toward mankind.
10. Deeper and more profound interpersonal relations.
11. Democratic character structure.
12. Clearly distinguished means from ends.
13. Philosophical, unhostile sense of humor.
14. Special kind of originality, creativeness or inventiveness.
15. Resistance of enculturation-ruled by the laws of their own character rather than society.

In summary, Maslow (1954), described self-actualization as the full use and exploitation of talents, capacities, and potentialities. Self-actualizing people seem to be fulfilling themselves and to be doing the best they are capable of doing (p. 200).

The above theories proposed by Jung and Maslow contribute to the framework for the central purpose of the present study, ie., the exploration of the personality dimensions of need level and perceptual preference among a population of nursing students. The identification of personality types characteristic of nursing students, based on definite perceptual preferences as outlined by Jung, will be combined with an investigation of need level as demonstrated by

attainment or lack of attainment of certain important aspects of self-actualization. Educational implications of these findings will be explored based upon Mogar's psychological theory of education.

MOGAR'S PSYCHOLOGICAL THEORY OF EDUCATION

Derived partially from theories of Maslow and Jung, Mogar's theory of education (1969), provides the framework of the present study. This theory states that dominant need level and perception-judgment preference are important variables in determining the impact of a given educational process on a given individual. He maintains that we are still largely unaware of individual differences in educability, and of the value of different teaching methods.

The theory provides a basis for collecting data from individuals and educational subgroups and provides a framework for:

1. Exploring discrepancies between latent and manifest human resources.
2. Utilizing alternative educational approaches (Mogar, 1969, p. 19).

Mogar outlines four basic perception-judgment combinations. "Perception" is here defined as the process of becoming aware; of things, people, occurrences, or ideas. "Judgment" includes the process of coming to conclusions about what has been perceived (p. 20). Based on Jungian personality theory, the possible combinations resulting are: Sensing-Thinking (ST), Sensing-Feeling (SF), Intuition-Thinking (NT), and Intuition-Feeling (NF).

A person develops a preference for one mode of perceiving

1. The first part of the paper discusses the importance of understanding the underlying mechanisms of the observed phenomena. This is crucial for developing effective interventions and policies. The authors argue that a comprehensive understanding of the system is necessary to address the complex challenges it presents.

2. The second part of the paper focuses on the empirical evidence supporting the proposed model. The authors present a series of experiments and analyses that demonstrate the validity of their theoretical framework. They show that the model accurately predicts the behavior of the system under various conditions, providing strong support for their conclusions.

3. The third part of the paper discusses the implications of the findings for future research and practice. The authors highlight the need for further studies to explore the long-term effects of the interventions and to refine the model based on new data. They also discuss the potential applications of the findings in various fields, emphasizing the importance of interdisciplinary collaboration in addressing these complex issues.

and one mode of judging; the alternate functions remain largely undeveloped. Each preference produces a different personality type. For example, the sensing-thinking person tends to be practical and matter-of-fact, since facts can be verified directly by the senses.

Need Levels

Mogar suggests particular educational techniques have differential appeal and relevance to individuals with varying perception-judgment lifestyles and need levels. The need levels are those formulated by Abraham Maslow (1954), along a deficiency-growth continuum:

1. physiological
2. security
3. belongingness and love
4. achievement and esteem
5. self-actualization

The first four levels are deficiency motivated, ie., prevent illness. The fifth level of self-actualization promotes growth. Self-actualization is defined here as the utilization of one's unique capacities to realize complete functioning (Fisher, 1968, p. 561).

Educational Approaches

Mogar points out that educational institutions today mainly reward sensing perception and thinking judgments. He maintains that such a uniform mode of instruction, where all people are exposed to the same educational process, ignores the perception-judgment needs of the individual. Mogar goes on to outline two educational

approaches, each of which is individualized to meet the needs of those with a particular perception-judgment life-style.

Congruity Approach

Educational techniques are individualized to meet the needs of a particular perception-judgment preference. For example, those preferring sensing-thinking are facilitated by techniques such as programmed learning, auto-suggestion, and rational therapy. Intuition-thinking individuals find brainstorming and T-groups most compatible with their needs, as they are most effective when focusing on possibilities by impersonal analysis (Table 2, p. 24). The lower an individual's need level, the more likely is he to be receptive and to benefit from the congruity approach. This approach to education develops dominant capacities, which are more easily actualized, and therefore is best for those who have not reached the need level of self-actualization (p. 30).

Complementary Approach

Individuals of a given life style are exposed to educational techniques opposite to that life style. This approach develops latent potentialities but assumes maximum development of dominant capacities. That is, the higher the need level, the more receptive an individual would be to the complementary approach and the more likely he would be to benefit maximally from it. Therefore, this approach could best be used with individuals who have reached the need level of self-actualization (p. 30).

In brief, Mogar postulates that an individual's

receptiveness to a given educational technique is a function of:

1. his perception-judgment preference, and
2. his dominant need level.

Summary

Theories proposed by C. G. Jung and Abraham Maslow have been reviewed in light of their contribution to Mogar's psychological theory of education (1969). Mogar's theory forms the basis for the major purpose of the present study, the investigation of personality variables of perceptual preference and need level among nursing students. Several of the major questions to be investigated originate directly from Mogar's theory:

1. Do students entering nursing school exhibit a distinct pattern of need levels?
2. If a distinct pattern of need levels can be identified, what are the implications for selection and teaching procedures in nursing education?
3. Do students entering a nursing school exhibit a distinct perceptual pattern?
4. If a distinct perceptual pattern is identified, what are the implications for selection and teaching procedures in nursing education?

Should a distinct need level perceptual pattern be discovered among the students, the theory will provide a framework for the discussion of implications of the findings for selection and teaching procedures in nursing education.

In keeping with the purpose of the present study and in view of the theory upon which the study is based, consideration will now be given to a review of related research.

CHAPTER III

REVIEW OF RELATED RESEARCH

Over the years many investigators have explored the personality characteristics of nurses. Although these inquiries have produced a variety of reports there have been relatively few studies of the implications of student personality characteristics for nursing education. The present chapter consists of a review of research which is relevant to the present exploration of personality characteristics of nursing students. The purpose of the study will be to explore these characteristics in relation to nursing achievement, and an attempt will be made to relate the findings to possible implications for nursing education.

Early literature on the relationship between personality and nursing success is equivocal. Some studies questioned the existence of a specific pattern of traits which are characteristic of nurses as a group (Beaver, 1953; Healy and Borg, 1951). More recently, the assessment of student characteristics has received renewed attention in nursing education. This is due largely to the findings of men such as McConnell (1962), who wrote that students' intellectual dispositions, educational goals, values and attitudes, are important determinants of their response to education (p. 46).

The upsurge of interest in the personal characteristics of students is in keeping with findings derived from sociological and vocational research. Arnold (1970), explored the values of functional groups, such as those in occupational and educational

settings, and how they influence the member's conduct. He states that an important question for research is whether the experience of being educated or working in a particular subculture is reflected in the personality structure of the individual (p. 32). Research dealing with theories of vocational choice indicate that occupational preferences and selection reflect the individual's attempt to find a work setting he perceives to be congruent to his personal style of living (Holland, 1966; Stocker, 1964; Osipow, 1969). For example, in studying self-expressive styles among college students preparing for careers in nursing, Griffith and Irogdon (1969), found these students to have a distinct preference for the "humanistic" modes of self-expression, preferring aiding, supporting, nurturing, and comforting as opposed to the interpretive, promotional, and technological preferences as measured by the Preference Association Survey. The authors concluded that for constructive self-expression, facilitating educational environments are important.

The renewed interest in personality characteristics of nurses specifically, may be seen to be related as well to the growing concern about depersonalization of health care services. Shetland (1969), discusses the responsibility of schools of nursing for preparing nurses for "ethical, moral, and humanistic" practice, and calls for a re-examination of current attitudes toward the qualifications for entering the career.

A number of studies, using a variety of measurements, have investigated the personality characteristics of nursing students. Freshman students scored significantly higher than the normative

group in nurturance and order as measured by the Personality Research Form, and lower than the normative group in affiliation, aggression, autonomy, and change (Hoffman, 1970, p. 1004). Bernfeld (1967), found that the MMPI profile of a nursing student population resembles the MMPI profile of female college students. The Allport, Vernon, Lindzey Study of Values was used to investigate change and stability of values in baccalaureate nursing students. Significant changes in values from a religious to an aesthetic orientation were shown to occur over the four year period (May, 1970). Redman (1966), administered the same test to intermediate students and their instructors. She found that the nursing instructors valued theoretical and aesthetic motives more than did their students, while students were more social.

The Edward's Personal Preference Schedule (EPPS), has been the most frequently chosen instrument for looking at personality variables of these students. George and Stephens (1968), found public health nurses showed greater need for Autonomy in the EPPS, whereas psychiatric nurses emphasized Deference and Aggression. Successful and unsuccessful nursing students have been compared with each other and each with the normative group. Reece (1961), found that students completing the program had greater needs for deference and nurturance than "college women in general".

There are several consistencies among the findings of the studies using the EPPS. However, there are many inconsistencies, ranging from simple failures of one study to support the results of a previous study, to direct contradictions of previous findings. Stricker (1965), reviewing the EPPS, concluded that this test might

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part outlines the various methods and tools used to collect and analyze data. It mentions the use of surveys, interviews, and focus groups to gather information from stakeholders. Additionally, it discusses the application of statistical analysis to interpret the collected data.

3. The third part describes the process of identifying key trends and patterns in the data. It highlights the need for a systematic approach to data analysis, involving the identification of relevant variables and the use of appropriate statistical techniques.

4. The fourth part focuses on the communication of findings to the relevant stakeholders. It stresses the importance of presenting the results in a clear and concise manner, using visual aids such as charts and graphs to enhance understanding.

5. The fifth part discusses the implications of the findings for the organization's strategy and decision-making. It suggests that the results should be used to inform the development of policies and procedures, as well as to guide the allocation of resources.

6. The sixth part concludes the document by summarizing the key points and reiterating the importance of ongoing monitoring and evaluation. It encourages the organization to regularly review its performance and make adjustments as needed to ensure continued success.

better be replaced by another inventory in studying nurses's personality traits. Adams and Klein (1970), evaluating the assessment of personality characteristics of nursing students, also concluded that continued research into personality variables is necessary with a wider range of instruments.

The personality dimensions of self-and role-perception of nursing students have also been investigated. Holinski (1964) explored self-perception, self-aspiration, and occupational perception among university nursing students. The principal finding of this study was that the nursing role is likely broad enough in perception and reality to accomodate a range of personality structures and levels of intellectual ability. Kogan and Jackson (1961), in studying student nurses' perceptions of a good nurse, found differences between freshmen's and senior students' views. Some of the characteristics considered less important by seniors than by freshmen are just those traits, as revealed by other studies, that patients want nurses to exhibit, eg. affectionate and warm personality (p. 77).

The role of values, attitudes, and perceptual preferences in influencing an individual's educational and career pattern has been well documented. Witkin, Dyk and Faterson (1962) suggest that individuals tend to organize their perceptual experiences along distinctive lines. These differences in perceptual organization have important behavioral consequences in relation to career development. Arnold (1970), writing about the sociology of subcultures, states that it is from participation in these that individuals develop most of their attitudes and patterns of behavior.

Allowing for individual variation, he implies that the learning process generates common reaction patterns and differential perceptual habits (p. 143). A test measuring perceptual preferences, the Myers-Briggs Type Indicator, was among the instruments used to examine the personality characteristics of female students who persisted and those who did not persist in an advanced placement program. Persisting girls were shown to display a definite preference for using the modes of intuition and perception (Morris, 1964). Goldschmid (1967), hypothesized that significant personality traits will correlate with a person's choice of major in college. Fifty-five academic disciplines were scaled on two continua, one pertaining to science and the other to humanities. The Myers-Briggs Type Indicator was among the battery of tests given to the freshmen students. The results implied that personality characteristics are definitely related to choice of major. For example, nursing freshmen scored higher on the science dimension than on the humanistic dimension. Subjects preferring science were characterized as conventional, reserved, having a tendency to evaluate ideas on the basis of their practical and immediate application, and preferring logical, precise analysis of problems (p. 306).

A number of studies have attempted to relate personality characteristics of nursing students to academic success. Taylor (1963), administered a battery of tests to nursing students and found intelligence and aptitude to be the best predictors of academic performance and success in nursing schools. Similarly, in reviewing the literature on dropouts from colleges, Summerskill

1. The first part of the document is a letter from the President of the United States to the Congress.

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30. The thirtieth part is a report from the Secretary of the Education on the state of the Education.

(1962), considered biological, social, motivational, illness and injury, adjustment, and academic performance correlates of college success. Of these, academic factors were found to be the best predictors of college success.

Stewart (1968), used the Personal Orientation Inventory (POI) to explore the relation of personal factors and academic performance among university students. The test scores were related to grade point average and the School and College Ability Test, as a measure of academic ability. No significant relationships between these measures and the POI were found, except for grade point average and the capacity for Intimate Contact scale ($p < .05$). However, a study by Green (1967), using the same instrument, found that certain characteristics of self-actualization contributed significantly to nursing performance. These were: The ability to use time efficiently, to transcend dichotomies in understanding oneself and others, and to have regard for self because of recognized strengths.

Although a number of studies have attempted to relate personality characteristics of nursing students to academic success, comparatively few studies have explored these variables in relation to clinical performance. Johnson and Leonard (1970), found nursing students to be more intelligent and more assertive and experimenting than college students in general. These findings were related to academic and clinical nursing success. The test scores were helpful in predicting theory grades but were of very little value in predicting clinical performance. The writers concluded that the search for factors associated with clinical performance needs to

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be continued.

Recent researchers have increasingly studied those characteristics of a nurse which may contribute to differences in clinical performance. Green (1967), Huber (1970), and Pittman and Kerchner (1970), explored the element of self-actualization among nurses. The last two authors describe the reason for this focus:

The dimensions of self-actualization of nurses seemed worthy of study because literature in the behavioral sciences suggested that these traits were indicative of the fully functioning adult, and the fully functioning adult would be expected to provide the best climate of nursing care (1970, p. 232).

The writers conclude that the goal of self-actualization as a concept of personal maturity may be looked upon as a desirable goal for nurses. In the same vein, Rosenthal (1967), studied the values and behaviors important to the self-actualization process of university freshmen women students. These variables were measured by the Personal Orientation Inventory upon entrance to a university as freshmen and again at the end of the first academic year. She found these students do experience positive growth in the self-actualization process and recommended that this test be administered to university students for guidance and personnel purposes. Redman (1966), in evaluating the values of nursing students, encouraged further study of the congruence of the student's values in relation to those of the school, and the relationship of values held to teaching behavior in nursing schools.

Summary

The findings of the above research which are pertinent to the

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present study are summarized below:

1. It has been shown that a self-expressive style seems to be characteristic of nursing students, and it has been suggested that for constructive self-expression, facilitating educational environments are important.
2. There appears to be a need for further study of the congruence of student's values to teaching behavior in nursing schools.
3. There is evidence that university students do experience growth toward self-actualization during the course of their program.
4. It has been shown that characteristics of self-actualization contribute to nursing performance.
5. There is evidence that further research for factors associated with clinical performance is necessary.

Based on the above findings it appeared reasonable to investigate the following questions:

1. In the nursing education program, is there a relationship between certain personality characteristics of beginning nursing students and,
 - (a) academic nursing achievement
 - (b) clinical performance achievement?
2. If a distinct pattern of need levels and perceptual preferences of nursing students can be identified, what are the implications for selection and teaching procedures in nursing education?

DEFINITIONS

The major research question of the present thesis is: to what extent are the personality characteristics of extroversion-introversion, sensing-intuition, thinking-feeling, judging-perceiving, and self-actualization associated with both academic and clinical nursing performance? These are the main variables of the present study and will be operationally defined below.

Academic Achievement; This variable will be specifically the marks obtained in nursing theory, psychology, sociology, and microbiology examinations written at the end of the first semester of the nursing education program.

Clinical Performance: This variable will be specifically the mark obtained in clinical nursing experience as evaluated by the instructor at the end of the first semester.

The modes of Extroversion-Introversion, Thinking-Feeling, Sensing-Intuition, and Judging-Perceiving are operationally defined as scores on the Myers-Briggs Type Indicator. For example, Extroversion will be defined as the score obtained on the E scale.

The Self-Actualization dimension is operationally defined as the score obtained on the Inner-directed (I) scale of the Personal Orientation Inventory.

Normative Population: For the dimension measured by the Personal Orientation Inventory, the normative population used is a group of female freshmen college students (Gunter, 1969). For the dimensions measured by the Myers-Briggs Type Indicator, the normative population used is a group of females in a first year liberal arts program, as described in the manual for this test (Myers, 1962).

HYPOTHESES

Based on the preceding research and in keeping with the major purpose of this study, to examine dimensions of perceptual

preference and need level in a population of nursing students in relation to academic and clinical nursing performance, the following Hypotheses were tested:

Hypothesis I. In the dimensions of judging-perceiving the freshman nursing population do not differ from the normative population;

(a) On the Extroversion Introversion continuum the nursing students do not differ from the normative population.

(b) On the Thinking-Feeling continuum the nursing students do not differ from the normative population.

(c) On the Sensing-Intuition continuum the nursing students do not differ from the normative population.

(d) On the Judging-Perceiving continuum the nursing students do not differ from the normative population.

Hypothesis II. On the dimension of self-actualization the freshman nursing students do not differ from the normative population.

Hypothesis III. Freshman nursing students identified as Extroverted do not differ from those identified as Introverted in academic performance as measured by the marks obtained in the following first semester courses:

- (a) Nursing Theory
- (b) Clinical Performance
- (c) Sociology
- (d) Psychology
- (e) Microbiology

Hypothesis IV. Freshman nursing students identified as

Thinking types do not differ from those identified as Feeling types in academic performance as measured by the marks obtained in the following first semester courses:

- (a) Nursing Theory
- (b) Clinical Performance
- (c) Sociology
- (d) Psychology
- (e) Microbiology

Hypothesis V. Freshman nursing students identified as Sensing types do not differ from those identified as Intuitive types in academic performance as measured by the marks obtained in the following first semester courses:

- (a) Nursing Theory
- (b) Clinical Performance
- (c) Sociology
- (d) Psychology
- (e) Microbiology

Hypothesis VI. Freshman nursing students identified as Judging types do not differ from those identified as Perceptive types in academic performance as measured by the marks obtained in the following first semester courses:

- (a) Nursing Theory
- (b) Clinical Performance
- (c) Sociology
- (d) Psychology
- (e) Microbiology

Hypothesis VII. There is no relationship between the personality variable, self-actualization, and academic performance as measured by the marks obtained in the following first semester courses:

- (a) Nursing Theory
- (b) Clinical Performance
- (c) Sociology
- (d) Psychology
- (e) Microbiology

The above hypotheses were tested by collecting data related to personality characteristics of a population of first year nursing students. The research design and procedure of the study will be discussed in the following chapter.

CHAPTER IV

RESEARCH DESIGN AND PROCEDURE

The Sample

The sample consisted of 75 female students registered in a hospital based program in nursing. Ages of the subjects ranged from 17 to 28, with a mean age of 18. The majority had entered nursing school directly upon completion of high school, and all were single. Data for the present study were collected while all subjects were in the first semester of the first year of a three year diploma nursing program. Due to school policy, the investigator was limited to volunteers from a total nursing class population of 139. Of those participating, 24 test results were invalidated due to lack of adequate identification. Therefore, the sample consisted of approximately 54% of the total freshman class. Because of this, the possibility of a selection bias needs to be considered when the results are interpreted.

Prior to testing, the subjects were informed of the nature of the study and assured anonymity with respect to their involvement in it. Two personality tests, the Personal Orientation Inventory and the Myers-Briggs Type Indicator, were administered to the 75 nursing students. The administration of both tests was conducted by the investigator in two separate sessions, outside the regular class periods.

The group was examined on four dimensions of personality as measured by the Myers-Briggs Type Indicator; Extroversion-Introversion, Sensing-Intuition, Thinking-Feeling, and Judging-Perception. Of the twelve value dimensions revealed in

responses to the Personal Orientation Inventory, one scale, Inner-directedness (I), was isolated for statistical analysis of level of self-actualization.

Personality characteristics measured by these tests were compared to the marks obtained in nursing theory, sociology, psychology, and microbiology examinations, and in clinical nursing performance. All marks were based on evaluations conducted at the end of the first semester of the program. Student similarities and differences were determined by means of one-way analyses of variance performed on the data.

THE RESEARCH INSTRUMENTS

The Personal Orientation Inventory

The Personal Orientation Inventory (POI), developed by Shostrom in 1966, measures value dimensions essential to human growth or self-actualization. The self-actualized person has been described as a person who is more fully functioning and lives a more enriched life than does the average person (Maslow, 1954). Based largely upon Maslow's theory of self-actualization (1954, 1962), the items of the test reflect value orientations considered important to a person's approach to living.

Scales of the POI

The test consists of 150 2-choice comparative value and behavior judgments. Items are scored twice, first for two basic scales of personal orientation, Inner-directed support (I), and Time Competence (Tc). Secondly, the items are scored for ten subscales. These centre on five areas, those of valuing, feeling,

self-perception, interpersonal sensitivity, and awareness. To aid in clarifying the value dimensions measured by the POI, the basic scales of this test are listed and described below.

Basic Scales

1. Inner-directed Support (I): Based on the writings of Maslow (1962) and Reisman (1950), this scale measures whether a person's orientation is basically towards others or towards himself. Inner-directed individuals are guided primarily by internalized principles, while other-directed persons are influenced more by their peer group or external forces (Shostrom, 1966, p. 5). This scale is measured by 127 of the 150 items in the test. Since it overlaps most heavily with all other scales, it represents an overall measure of the POI. Research consistently supports the I scale as the best single estimate of self-actualization (Shostrom, 1966; Knapp, 1965; Damm, 1969; Rosenthal, 1967).

2. Time Competence (Tc): This scale measures the degree to which one is "present" oriented. The time competent person lives primarily in the present while the time incompetent person lives mainly in the past with guilts and regrets, and/or in the future, with idealized goals, plans, and expectations (Shostrom, 1966, p. 5).

The basic scales represent the underlying conceptual framework of the POI. The process of self-actualization is said to involve the development of both Time Competence and Inner-directedness of support. Research has shown that there is a close relationship between these dimensions, as the person who lives in the present

relies more on his own support than does the person who lives more in the past or in the future. Maslow describes this as a contrast between living fully and preparing to live (1962, p. 30).

The Time Competence and Inner-directed scales are the only scales that do not have overlapping items. The ten subscales, each of which measures an important element of self-actualization, do not represent independent dimensions, and the interrelationship among these scales is high (Shostrom, 1966, Table 3, p. 21).

Ratio Scores

Scores for the Inner-directed Support and Time Competence scales are each presented as ratio scores. The Support Ratio score is expressed as a ratio of other orientation to inner orientation. The self-actualized individual's ratio between other-directedness and inner-directedness is approximately 1:3. This is in contrast to the non-self-actualized ratio of 1:1 (p. 17). The Time Ratio score is the ratio of Time Incompetence to Time Competence. The self-actualized individual's competent use of time is expressed in a time ratio of approximately 1:8. He is incompetent approximately one hour for every eight hours that he is time competent. This is in contrast to the non-self-actualized ratio of about 1:3 (Shostrom, 1966, p. 15).

Validity of the POI

The Personal Orientation Inventory has been shown to discriminate between those observed in their life behavior to have attained a relatively high level of self-actualization from those who have not evidenced such development. The test was given to

two groups nominated by certified psychologists to be either relatively self-actualized or non-self-actualized. Shostrom (1966), found mean scores for the self-actualized group to be above the normal adult group means on 11 of the 12 scales, and the means for the non-self-actualized group to be below the norm means on all scales (p. 25).

Evidence is available that the POI is an objective measure of level of mental health (leMay, 1969; Shostrom, 1966; Grossack, 1966; Fox, 1965). Scores obtained on the test reveal that alcoholics and hospitalized psychiatric patients score higher on the scales measuring self-regard and inner-directedness as therapy progresses (Fox, 1965). The value of the administration of the POI to university and to nursing students for guidance purposes has been recognized (Rosenthal, 1967; Green, 1967). Other studies report the test's ability to differentiate between such things as levels of performance on a neuroticism inventory (Knapp, 1965) and stages of psychotherapy involvement (Shostrom and Knapp, 1966).

Reliability of the POI

Shostrom (1966), reports test-retest reliability coefficients which were obtained when the POI was given twice, one week apart, to a sample of undergraduate college students. The coefficients for the major scales of Time Competence and Inner Directedness are .71 and .84 respectively. Subscale reliability coefficients range from .55 to .85. The correlations obtained in this study are generally at a level as high as that reported for most personality measures (Table 12, p. 32).

The Myers-Briggs Type Indicator

The Myers-Briggs Type Inventory (MBTI) is a self-report, Jungian-oriented, personality inventory. The test examines individual preferences in perception and judgment, producing scores on four separate scales. Originally developed more than twenty years ago, it has undergone several revisions, and a large body of reliability and validity data is available.

The MBTI contains separate indices for determining the four basic preferences which, under Jung's theory, structure the individual's personality. These preferences are listed below.

<u>Index</u>	<u>Preference as Between</u>
EI	Extraversion or Introversion
SN	Sensing or Intuition
TF	Thinking or Feeling
JP	Judgment or Perception

The preference for thinking or feeling is independent of the preference for sensing or intuition (Jung, 1923; Stricker and Ross, 1963). Four combinations of these two preferences are possible: sensing plus thinking (ST), sensing plus feeling (SF), intuition plus feeling (NF), and intuition plus thinking (NT). These, in combination with the preferences for extroversion or introversion, and judging or perceiving, result in a person being identified as a certain personality "type". That is, each of the possible combinations produces a different kind of personality, characterized by definite interests, values, and needs that result from that combination.

Since the MBTI provides information on basic personality differences, it may be applied in a variety of ways. The test can serve as an aid to self-understanding for educational, vocational, and personal counselling. The type characteristics correspond to aspects of work roles and therefore may provide information regarding optional education, training, and work situations (Myers, 1962).

Scales of the MBTI

1. Extroversion-Introversion (EI): This scale determines a preference for relating to the environment by means of extroversion or introversion. These terms were formulated by Jung, and are described as mutually valuable orientations to life. The extrovert is oriented primarily to the outer world of things and people. The introvert is oriented to the inner world and focuses his perception and judgment upon concepts and ideas. No one is limited exclusively to either mode, however, a distinct preference for one or the other is usually present (Jung, 1923).

2. Sensing-Intuition (SN): This scale shows the preferred mode of perceiving. It distinguishes between the individual who prefers sensing, that is, obtaining information by way of the five senses from his environment, versus the individual who prefers intuition, where perceptions are obtained indirectly, by way of the unconscious.

3. Thinking-Feeling (TF): The preferred method of judging is shown by this scale, ie., whether the person relies primarily upon thinking, which discriminates impersonally between true and

false, or primarily upon feeling, which discriminates between valued and not-valued.

4. Judging-Perceiving (JP): The Judging-Perceiving scale reflects whether the individual depends primarily upon a judging process (T or F), or upon a perceptive process (S or N) in his dealings with the outer world.

Principle of the Scales

The items of each scale are intended to reflect a habitual choice between opposites. For example, EI means E or I. Persons with more points for E than I are classed as extroverts. Since the EI score is found by obtaining the difference in the number of points for E and for I, any given person may have either an E score or an I score, but not both.

This principle holds true for determining the remaining scores. The letters from all four scores make up the "type preference", for example, ENFP, which describes the personality type of the individual.

Validity and Reliability of the MBTI

The Indicator's wide use in both theoretical and applied research, and its relevance in operationally defining Jung's personality typology has prompted much exploration of the test's internal characteristics.

Stricker and Ross (1963), investigated the internal-consistency and the intercorrelations among the scales. The reliability coefficients observed in this study were consistent with the test-retest reliability findings reported by Stricker and

Ross (1962), being in the .70's and .80's. They concluded that the Indicator appears to have about the same reliability as better known personality inventories, such as the California Psychological Inventory (Gough, 1957), the 16 P.F. Test (Cattell, Saunders, and Stice, 1957), and the Minnesota Multiphasic Personality Inventory (Hathaway and McKinley, 1951).

Stricker and Ross (1964), extensively explored the construct validity of each of the scales by investigating the scale's correlations with ability, interest, and personality scales. The findings reported in this article suggest that, although many of the scales may be interpreted as defined by Jung's typology, there do exist equally plausible interpretations of some of the scales' meanings. For example, the EI scale is intended to measure a dimension that is defined as an interest in things and people versus concepts and ideas. The items of this scale, however, were shown to describe interest and facility in social relations, frequently involving talkativeness (p. 635). Stricker and Ross recommended further research into the construct validity of this test in order to explicitly link each scale to its conceptual definition.

Assessments of the test's construct validity have also been reported by other researchers (Lord, 1958; Howarth, 1962; Myers, 1962; Ross, 1963). These studies support the existence of the underlying typological framework which the test measures.

Summary of the MBTI

The Myers-Briggs Type Indicator, based on Jungian theory, is a forced-choice self-report inventory, producing four preference

scores which are combined to describe a distinct personality type. Mendelsohn (1968), in reviewing the test, writes:

... findings indicate that type scores relate meaningfully to a wide range of variables including personality, ability, interest, values, aptitude and performance measures, academic choice, and behavior ratings...It would seem useful, then, for personality research and, given its relationships to measures of interest, value, aptitude, and achievement, for academic counseling (p. 322).

The Indicator can shed light on basic reasons for differences in occupational and scholastic performance. Myers (1962), writing in the manual, states that the test seems useful in adapting an educational program to meet the needs of the majority of students (p. 81).

SUMMARY OF PROCEDURE

Seventy-five students registered in a hospital based program in nursing were administered two personality tests, the Personal Orientation Inventory, and the Myers-Briggs Type Indicator. The scales, validity, and reliability of these instruments have been reviewed. Personality characteristics measured by these tests were compared by means of analysis of variance to the marks obtained in nursing theory, sociology, psychology, microbiology, and clinical nursing performance.

The statistical results of these comparisons are reported in the following chapter.

CHAPTER V

FINDINGS

Chapter V consists of a restatement of the seven hypotheses, together with the related experimental findings derived by standard statistical procedures.

Hypothesis I was previously stated as follows:

In the dimensions of judging-perceiving the freshman nursing population do not differ from the normative population:

- (A) On the Extroversion-Introversion continuum, the nursing students do not differ from the normative population.
- (B) On the Thinking-Feeling continuum, the nursing students do not differ from the normative population.
- (C) On the Sensing-Intuition continuum, the nursing students do not differ from the normative population.
- (D) On the Judging-Perceiving continuum, the nursing students do not differ from the normative population.

Scores for each scale of the Myers-Briggs Type Indicator (MBTI), were tabulated for each nursing subject. Confidence intervals with a confidence coefficient of 0.95 were constructed around the mean scores obtained by the subjects, to determine differences from the normative population. The results of this analysis are found in Table I.

As shown in Table I, parts B and D of Hypothesis I were confirmed. No difference was found on scores reflecting the

TABLE I

MEANS, STANDARD DEVIATIONS, AND CONFIDENCE INTERVALS OF SCORES ON THE MBTI FOR FRESHMEN
NURSING STUDENTS COMPARED TO A SAMPLE OF LIBERAL ARTS FEMALE FRESHMEN

Scales	Freshmen Nursing Students N=75		Confidence Intervals with 0.95 Confidence Coefficient of Freshmen Nursing Mean Scores	Liberal Arts Female Freshmen N=275
	Mean	Standard Deviation		
Extroversion	25.38	13.47	22.36-28.44	20.6*
Introversion	21.67	12.81	19.02-24.78	19.6
Thinking	14.53	10.90	12.07-16.93	16.5
Feeling	21.62	11.23	19.11-24.13	21.6
Sensing	22.24	15.89	18.67-25.81	16.6*
Intuition	22.80	12.14	20.10-25.50	26.4*
Judging	18.51	11.38	15.93-21.07	19.2
Perceiving	22.62	13.08	19.68-25.56	24.1

* Significant at the 0.05 level of confidence.

** Mean scores of Liberal Arts female freshmen signify the population mean.

Thinking-Feeling or Judging-Perceiving scales, between the nursing students and the Liberal Arts Freshmen.

However, a difference was found between mean scores obtained by the two groups on the Extroversion-Introversion scale. The nursing population obtained significantly higher mean scores on the Extroversion scale. Therefore, part A of Hypothesis I was rejected at the 0.05 level of confidence. Also, a difference was found between mean scores obtained by the two groups on the Sensing-Intuition scale. The nursing population obtained significantly higher mean scores on the Sensing scale, and significantly lower scores on the Intuition scale. Part C of Hypothesis I was therefore rejected at the 0.05 level of confidence.

The following results represent additional information which was considered important in conceptualizing the personality types of the nursing students, as portrayed by the MBTI. Percentage frequencies of each personality type were calculated for the nursing freshmen group, in order to more generally compare the preferences of this group to those evidenced by the normative population. A summary of the findings is presented in Table II.

It may be seen that definite preferences for the mode of Extroversion and functions of Feeling and Judging appear to be characteristic of the nursing population. On a measure of frequency, this group was almost equally divided in preferring both Sensing and Intuition. The normative population also preferred Extroversion and Feeling; however, they differed from the nursing group in preferring Intuition and Perception versus Sensing and Judging.

TABLE II
 FREQUENCY OF THE MBTI PREFERENCES
 AMONG NURSING FRESHMEN* AND
 LIBERAL ARTS FEMALE FRESHMEN**

Perceptual Preferences	Frequency of Preference Among Liberal Arts Freshmen	Frequency of Preference Among Nursing Freshmen
Extroversion	58%	65%
Introversion	42%	35%
Sensing	30%	49%
Intuition	70%	51%
Thinking	34%	23%
Feeling	66%	77%
Judging	45%	63%
Perceiving	55%	37%

* N=75

** N=273

Although the nursing students were almost equally divided in preferring both the Sensing and Intuition modes of perceiving on a measure of frequency, in comparison with the normative population the main personality type of the nursing students was that of Extroversion-Feeling-Sensing-Judging (EFSJ). Similarly, the predominant personality type of the liberal arts group was that of Extroversion-Feeling-Intuition-Perception (EFNP).

Hypothesis II was previously stated as follows:

On a dimension of self-actualization, the nursing students do not differ from the normative population.

The above hypothesis was rejected at the 0.05 level of confidence. A difference was found between mean scores obtained on the dimension of self-actualization by the college freshmen and nursing freshmen groups. The nursing students scored significantly higher than the female freshmen college students on the Inner-directed scale of the POI. A summary of the comparison between the two groups on the dimension of self-actualization is presented in Table III.

Hypothesis II was examined by tabulating the scores on the Inner-directed scale of the Personal Orientation Inventory (POI), for each nursing subject. Differences between mean scores for the nursing student population and the college female freshmen were examined by establishing a confidence interval with confidence coefficient of 0.95 around the mean scores obtained by the nursing subjects, as shown in Table III. Because the nursing students

TABLE III
MEAN, STANDARD DEVIATIONS, AND CONFIDENCE INTERVALS OF SCORES ON THE POI
FOR FRESHMEN NURSING STUDENTS, COMPARED TO A
SAMPLE OF LIBERAL ARTS FEMALE FRESHMEN

Scale	Nursing Freshmen N=75		Confidence Interval with 0.95 Confidence Coefficient of Freshmen Nursing Mean Score		College Female Freshmen N=792	
	Mean	Standard Deviation			Mean	Standard Deviation
Inner-directed	81.75	9.02	79.73-83.77		76.0	9.7

scored significantly higher than the female freshmen college students, the data would seem to indicate that the students in nursing are more mature than the college students in terms of this important aspect of self-actualization.

In order to more comprehensively answer the question relating to need level of the nursing population, and in keeping with the above hypothesis, the scores obtained on the POI by the nursing students were also compared with those obtained by a self-actualized group. This comparison was similarly made by constructing a confidence interval around the mean score obtained by the subjects, in order to determine differences from the self-actualized population. A confidence coefficient of 0.95 was again selected. The results of this analysis are presented in Table IV.

A difference was found between the mean score obtained by the nursing population and the self-actualized population on the Inner-directed scale of the POI. Thus, the data indicates that, although this group of nursing students differed from liberal arts freshmen on the dimension of self-actualization, they had not yet reached the need level of a self-actualized group.

Whereas the establishment of confidence intervals was used for analysis of Hypothesis I and Hypothesis II, the data for the remaining five hypotheses were studied by means of one-way analysis of variance.

Hypothesis III was previously stated as follows:

Nursing students identified as Extroverts do not differ from those identified as Introverts in nursing achievement as measured by the marks

TABLE IV

MEANS, STANDARD DEVIATIONS, AND CONFIDENCE INTERVALS OF SCORES ON THE POI
FOR FRESHMEN NURSING STUDENTS COMPARED TO A SELF-ACTUALIZED POPULATION

Scale	Self-actualized	Nursing Freshmen		Confidence Interval with 0.95 Confidence Coefficient of Freshmen Nursing Mean Score
	Group N=29 Mean	Mean	Standard Deviation N=75	
Inner-directed	92.86	81.75	9.02	79.73-83.77

obtained in the following first semester courses:

- (A) Nursing Theory
- (B) Clinical Performance
- (C) Sociology
- (D) Psychology
- (E) Microbiology

As shown in Tables V and VI, the confirmation of part A, B, D, and E of the above hypothesis was obtained. Those identified as Extroverts did not differ from those identified as Introverts in nursing achievement, as measured by the marks obtained in Nursing Theory, Clinical Performance, Psychology, and Microbiology.

Analysis of variance indicated a difference between the two groups on the dimension of achievement in a Sociology course. As presented in Table VI, significantly higher scores in Sociology were obtained by those identified as Introverted. Part C of Hypothesis III was, therefore, rejected at the 0.01 level of confidence.

Hypothesis IV was previously stated as follows:

Nursing students identified as Thinking types do not differ from those identified as Feeling types in nursing achievement as measured by the marks obtained in the following courses:

- (A) Nursing Theory
- (B) Clinical Performance
- (C) Sociology
- (D) Psychology
- (E) Microbiology

THE HISTORY OF THE

REIGN OF

CHARLES THE FIRST

BY

JOHN BURNET

OF

SCOTLAND

IN TWO VOLUMES.

LONDON, Printed by J. Streater, at the Sign of the Gun, in St. Dunstons Church-yard, 1679.

THE SECOND VOLUME.

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THE SECOND VOLUME.

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IN TWO VOLUMES.

TABLE V
MEANS AND STANDARD DEVIATIONS OF SCORES OBTAINED
ON FIVE VARIABLES BY NURSING FRESHMEN IDENTIFIED
AS EXTROVERTED OR INTROVERTED

Variable	Scale	Number	Mean	Standard Deviation
Nursing Theory	Extroversion	49	63.18	6.46
	Introversion	26	63.11	10.98
Clinical Performance*	Extroversion	49	1.55	0.50
	Introversion	26	1.38	0.49
Sociology	Extroversion	49	67.48	9.51
	Introversion	26	74.38	12.43
Psychology	Extroversion	49	53.67	8.19
	Introversion	26	58.11	14.50
Microbiology	Extroversion	49	57.77	9.43
	Introversion	26	59.92	9.19

* Mark of "1" signifies average clinical performance.
Mark of "2" signifies above average clinical performance.

TABLE VI

SUMMARY OF ANALYSES OF VARIANCE OF SCORES
OBTAINED ON FIVE VARIABLES BY NURSING FRESHMEN
IDENTIFIED AS EXTROVERTED OR INTROVERTED

Variable	Scale		df	MS	F	p
Nursing Theory	Extroversion	Groups	1	0.06	0.00	0.98
	Introversion	Error	73	68.80		
Clinical Performance	Extroversion	Groups	1	0.47	1.88	0.17
	Introversion	Error	73	0.25		
Sociology	Extroversion	Groups	1	807.50	7.18	0.009*
	Introversion	Error	73	112.53		
Psychology	Extroversion	Groups	1	335.25	2.88	0.093
	Introversion	Error	73	116.21		
Microbiology	Extroversion	Groups	1	78.44	0.90	0.35
	Introversion	Error	73	87.46		

* Nursing students identified as Introverted obtained significantly higher marks in Sociology.

TABLE

OF THE

NAME		RESIDENCE		DATE	
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102

THE

As shown in Tables VII and VIII, confirmation of all parts of the above hypothesis was obtained. Analysis of variance indicated that those identified as Thinking types did not differ from those identified as Feeling types in nursing achievement, as measured by the marks obtained in the above five courses.

Hypothesis V was previously stated as follows:

Nursing students identified as Sensing types do not differ from those identified as Intuitive types in nursing achievement, as measured by the marks obtained in the following first semester courses:

- (A) Nursing Theory
- (B) Clinical Performance
- (C) Sociology
- (D) Psychology
- (E) Microbiology

As shown in Tables IX and X, confirmation of all parts of the above hypothesis was obtained. Analysis of variance indicated that those identified as Sensing types did not differ from those identified as Intuitive types in nursing achievement, as measured by the marks obtained in the above five courses.

Hypothesis VI was previously stated as follows:

Nursing students identified as Judging types do not differ from those identified as Perceptive types in nursing achievement, as measured by the marks obtained in the following first semester courses:

- (A) Nursing Theory
- (B) Clinical Performance
- (C) Sociology

TABLE VII

MEANS, AND STANDARD DEVIATIONS OF SCORES OBTAINED
ON FIVE VARIABLES BY NURSING FRESHMEN IDENTIFIED
AS THINKING OR FEELING PERSONALITY TYPES

Variable	Scale	Number	Mean	Standard Deviation
Nursing Theory	Thinking	17	61.11	8.02
	Feeling	58	63.75	8.27
Clinical Performance	Thinking	17	1.29	0.46
	Feeling	58	1.55	0.50
Sociology	Thinking	17	69.64	10.51
	Feeling	58	69.94	11.27
Psychology	Thinking	17	53.82	6.07
	Feeling	58	55.62	11.98
Microbiology	Thinking	17	54.94	9.28
	Feeling	58	59.56	8.99

TABLE VIII

SUMMARY OF ANALYSES OF VARIANCE OF SCORES
OBTAINED ON FIVE VARIABLES BY NURSING
FRESHMEN IDENTIFIED AS THINKING OR
FEELING PERSONALITY TYPES

Variable	Scale		df	MS	F	p
Nursing Theory	Thinking	Groups	1	91.69	1.36	0.24
	Feeling	Error	73	67.54		
Clinical Performance	Thinking	Groups	1	0.87	3.56	0.063
	Feeling	Error	73	0.24		
Sociology	Thinking	Groups	1	1.12	0.01	0.92
	Feeling	Error	73	123.57		
Psychology	Thinking	Groups	1	42.56	0.35	0.55
	Feeling	Error	73	120.22		
Microbiology	Thinking	Groups	1	281.63	3.33	0.07
	Feeling	Error	73	84.67		

TABLE IX

MEANS AND STANDARD DEVIATIONS OF SCORES OBTAINED
ON FIVE VARIABLES BY NURSING FRESHMEN IDENTIFIED
AS SENSING OR INTUITIVE PERSONALITY TYPES

Variable	Scale	Number	Mean	Standard Deviation
Nursing Theory	Sensing	37	64.28	8.79
	Intuition	38	62.00	7.60
Clinical Performance	Sensing	37	1.45	0.50
	Intuition	38	1.52	0.50
Sociology	Sensing	37	69.40	11.13
	Intuition	38	70.34	11.07
Psychology	Sensing	37	54.27	12.72
	Intuition	38	56.13	8.89
Microbiology	Sensing	37	57.86	8.37
	Intuition	38	59.18	10.28

TABLE I

Summary of the results of the experiments on the effect of the concentration of the solution on the rate of the reaction.

Concentration of the solution				Rate of the reaction	
Molarity				Relative rate	
Moles/l.				Observed	
0.01	0.01	0.01	0.01	1.00	1.00
0.02	0.02	0.02	0.02	1.00	1.00
0.03	0.03	0.03	0.03	1.00	1.00
0.04	0.04	0.04	0.04	1.00	1.00
0.05	0.05	0.05	0.05	1.00	1.00
0.06	0.06	0.06	0.06	1.00	1.00
0.07	0.07	0.07	0.07	1.00	1.00
0.08	0.08	0.08	0.08	1.00	1.00
0.09	0.09	0.09	0.09	1.00	1.00
0.10	0.10	0.10	0.10	1.00	1.00
0.11	0.11	0.11	0.11	1.00	1.00
0.12	0.12	0.12	0.12	1.00	1.00
0.13	0.13	0.13	0.13	1.00	1.00
0.14	0.14	0.14	0.14	1.00	1.00
0.15	0.15	0.15	0.15	1.00	1.00
0.16	0.16	0.16	0.16	1.00	1.00
0.17	0.17	0.17	0.17	1.00	1.00
0.18	0.18	0.18	0.18	1.00	1.00
0.19	0.19	0.19	0.19	1.00	1.00
0.20	0.20	0.20	0.20	1.00	1.00
0.21	0.21	0.21	0.21	1.00	1.00
0.22	0.22	0.22	0.22	1.00	1.00
0.23	0.23	0.23	0.23	1.00	1.00
0.24	0.24	0.24	0.24	1.00	1.00
0.25	0.25	0.25	0.25	1.00	1.00
0.26	0.26	0.26	0.26	1.00	1.00
0.27	0.27	0.27	0.27	1.00	1.00
0.28	0.28	0.28	0.28	1.00	1.00
0.29	0.29	0.29	0.29	1.00	1.00
0.30	0.30	0.30	0.30	1.00	1.00
0.31	0.31	0.31	0.31	1.00	1.00
0.32	0.32	0.32	0.32	1.00	1.00
0.33	0.33	0.33	0.33	1.00	1.00
0.34	0.34	0.34	0.34	1.00	1.00
0.35	0.35	0.35	0.35	1.00	1.00
0.36	0.36	0.36	0.36	1.00	1.00
0.37	0.37	0.37	0.37	1.00	1.00
0.38	0.38	0.38	0.38	1.00	1.00
0.39	0.39	0.39	0.39	1.00	1.00
0.40	0.40	0.40	0.40	1.00	1.00
0.41	0.41	0.41	0.41	1.00	1.00
0.42	0.42	0.42	0.42	1.00	1.00
0.43	0.43	0.43	0.43	1.00	1.00
0.44	0.44	0.44	0.44	1.00	1.00
0.45	0.45	0.45	0.45	1.00	1.00
0.46	0.46	0.46	0.46	1.00	1.00
0.47	0.47	0.47	0.47	1.00	1.00
0.48	0.48	0.48	0.48	1.00	1.00
0.49	0.49	0.49	0.49	1.00	1.00
0.50	0.50	0.50	0.50	1.00	1.00
0.51	0.51	0.51	0.51	1.00	1.00
0.52	0.52	0.52	0.52	1.00	1.00
0.53	0.53	0.53	0.53	1.00	1.00
0.54	0.54	0.54	0.54	1.00	1.00
0.55	0.55	0.55	0.55	1.00	1.00
0.56	0.56	0.56	0.56	1.00	1.00
0.57	0.57	0.57	0.57	1.00	1.00
0.58	0.58	0.58	0.58	1.00	1.00
0.59	0.59	0.59	0.59	1.00	1.00
0.60	0.60	0.60	0.60	1.00	1.00
0.61	0.61	0.61	0.61	1.00	1.00
0.62	0.62	0.62	0.62	1.00	1.00
0.63	0.63	0.63	0.63	1.00	1.00
0.64	0.64	0.64	0.64	1.00	1.00
0.65	0.65	0.65	0.65	1.00	1.00
0.66	0.66	0.66	0.66	1.00	1.00
0.67	0.67	0.67	0.67	1.00	1.00
0.68	0.68	0.68	0.68	1.00	1.00
0.69	0.69	0.69	0.69	1.00	1.00
0.70	0.70	0.70	0.70	1.00	1.00
0.71	0.71	0.71	0.71	1.00	1.00
0.72	0.72	0.72	0.72	1.00	1.00
0.73	0.73	0.73	0.73	1.00	1.00
0.74	0.74	0.74	0.74	1.00	1.00
0.75	0.75	0.75	0.75	1.00	1.00
0.76	0.76	0.76	0.76	1.00	1.00
0.77	0.77	0.77	0.77	1.00	1.00
0.78	0.78	0.78	0.78	1.00	1.00
0.79	0.79	0.79	0.79	1.00	1.00
0.80	0.80	0.80	0.80	1.00	1.00
0.81	0.81	0.81	0.81	1.00	1.00
0.82	0.82	0.82	0.82	1.00	1.00
0.83	0.83	0.83	0.83	1.00	1.00
0.84	0.84	0.84	0.84	1.00	1.00
0.85	0.85	0.85	0.85	1.00	1.00
0.86	0.86	0.86	0.86	1.00	1.00
0.87	0.87	0.87	0.87	1.00	1.00
0.88	0.88	0.88	0.88	1.00	1.00
0.89	0.89	0.89	0.89	1.00	1.00
0.90	0.90	0.90	0.90	1.00	1.00
0.91	0.91	0.91	0.91	1.00	1.00
0.92	0.92	0.92	0.92	1.00	1.00
0.93	0.93	0.93	0.93	1.00	1.00
0.94	0.94	0.94	0.94	1.00	1.00
0.95	0.95	0.95	0.95	1.00	1.00
0.96	0.96	0.96	0.96	1.00	1.00
0.97	0.97	0.97	0.97	1.00	1.00
0.98	0.98	0.98	0.98	1.00	1.00
0.99	0.99	0.99	0.99	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00

TABLE X

SUMMARY OF ANALYSES OF VARIANCE SCORES OBTAINED
ON FIVE VARIABLES BY NURSING FRESHMEN IDENTIFIED
AS SENSING OR INTUITIVE PERSONALITY TYPES

Variable	Scale		df	MS	F	p
Nursing Theory	Sensing	Groups	1	98.25	1.46	0.23
	Intuition	Error	73	67.45		
Clinical Performance	Sensing	Groups	1	0.08	0.33	0.57
	Intuition	Error	73	0.26		
Sociology	Sensing	Groups	1	16.44	0.13	0.72
	Intuition	Error	73	123.36		
Psychology	Sensing	Groups	1	65.06	0.54	0.46
	Intuition	Error	73	119.91		
Microbiology	Sensing	Groups	1	32.81	0.37	0.54
	Intuition	Error	73	88.08		

(D) Psychology

(E) Microbiology

As shown in Tables XI and XII, confirmation of part A, B, C, and D of the above hypothesis was obtained. Students identified as Judging types did not differ from those identified as Perceptive types, in nursing achievement as measured by the marks obtained in Nursing Theory, Clinical Performance, Sociology, and Psychology.

Analysis of variance indicates a difference was obtained between the two groups on the dimension of achievement in a Microbiology course. As presented in Table XII, significantly higher scores were obtained in Microbiology by those identified as Judging types. Part E of Hypothesis VI was, therefore, rejected at the 0.02 level of confidence.

Hypothesis VII was previously stated as follows:

There is no relationship between the personality variable, self-actualization, and nursing achievement as measured by the marks obtained in the following first semester courses:

(A) Nursing Theory

(B) Clinical Performance

(C) Sociology

(D) Psychology

(E) Microbiology

As shown in Tables XIII and XIV, confirmation of part A, B, D, and E of the above hypothesis was obtained. Students identified as self-actualized did not differ from those identified as non-self-actualized in nursing achievement, as measured by the marks

TABLE XI

MEANS AND STANDARD DEVIATIONS OF SCORES OBTAINED
ON FIVE VARIABLES BY NURSING FRESHMEN IDENTIFIED
AS JUDGING OR PERCEPTIVE PERSONALITY TYPES

Variable	Scale	Number	Mean	Standard Deviation
Nursing Theory	Judging	47	63.32	8.99
	Perception	28	62.89	6.95
Clinical Performance	Judging	47	1.53	0.50
	Perception	28	1.43	0.50
Sociology	Judging	47	70.91	10.70
	Perception	28	68.14	11.57
Psychology	Judging	47	55.55	12.32
	Perception	28	54.64	8.19
Microbiology	Judging	47	60.44	7.82
	Perception	28	55.28	10.85

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1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

TABLE XII

SUMMARY OF ANALYSES OF VARIANCE OF SCORES OBTAINED
ON FIVE VARIABLES BY NURSING FRESHMEN IDENTIFIED
AS JUDGING OR PERCEPTIVE PERSONALITY TYPES

Variable	Scale		df	MS	F	p
Nursing Theory	Judging	Groups	1	3.19	0.05	0.83
	Perceiving	Error	73	68.75		
Clinical Performance	Judging	Groups	1	0.19	0.74	0.39
	Perceiving	Error	73	0.25		
Sociology	Judging	Groups	1	134.81	1.11	0.30
	Perceiving	Error	73	121.74		
Psychology	Judging	Groups	1	14.69	0.12	0.73
	Perceiving	Error	73	120.60		
Microbiology	Judging	Groups	1	467.50	5.69	0.019*
	Perceiving	Error	73	82.13		

* Nursing students identified as Judging types obtained significantly higher marks in Microbiology.

Table

Table 1. Summary of the data collected during the study.

Group 1					Total
Age	Gender	Height (cm)	Weight (kg)	Time (min)	
18-25	Male	175	75	10	10
26-35	Female	165	65	10	
36-45	Male	170	70	10	10
46-55	Female	160	60	10	
56-65	Male	172	72	10	10
66-75	Female	162	62	10	
76-85	Male	174	74	10	10
86-95	Female	164	64	10	
96-105	Male	176	76	10	10
106-115	Female	166	66	10	
116-125	Male	178	78	10	10
126-135	Female	168	68	10	
136-145	Male	180	80	10	10
146-155	Female	170	70	10	
156-165	Male	182	82	10	10
166-175	Female	172	72	10	
176-185	Male	184	84	10	10
186-195	Female	174	74	10	
196-205	Male	186	86	10	10
206-215	Female	176	76	10	
216-225	Male	188	88	10	10
226-235	Female	178	78	10	
236-245	Male	190	90	10	10
246-255	Female	180	80	10	
256-265	Male	192	92	10	10
266-275	Female	182	82	10	
276-285	Male	194	94	10	10
286-295	Female	184	84	10	
296-305	Male	196	96	10	10
306-315	Female	186	86	10	
316-325	Male	198	98	10	10
326-335	Female	188	88	10	
336-345	Male	200	100	10	10
346-355	Female	190	90	10	
356-365	Male	202	102	10	10
366-375	Female	192	92	10	
376-385	Male	204	104	10	10
386-395	Female	194	94	10	
396-405	Male	206	106	10	10
406-415	Female	196	96	10	
416-425	Male	208	108	10	10
426-435	Female	198	98	10	
436-445	Male	210	110	10	10
446-455	Female	200	100	10	
456-465	Male	212	112	10	10
466-475	Female	202	102	10	
476-485	Male	214	114	10	10
486-495	Female	204	104	10	
496-505	Male	216	116	10	10
506-515	Female	206	106	10	
516-525	Male	218	118	10	10
526-535	Female	208	108	10	
536-545	Male	220	120	10	10
546-555	Female	210	110	10	
556-565	Male	222	122	10	10
566-575	Female	212	112	10	
576-585	Male	224	124	10	10
586-595	Female	214	114	10	
596-605	Male	226	126	10	10
606-615	Female	216	116	10	
616-625	Male	228	128	10	10
626-635	Female	218	118	10	
636-645	Male	230	130	10	10
646-655	Female	220	120	10	
656-665	Male	232	132	10	10
666-675	Female	222	122	10	
676-685	Male	234	134	10	10
686-695	Female	224	124	10	
696-705	Male	236	136	10	10
706-715	Female	226	126	10	
716-725	Male	238	138	10	10
726-735	Female	228	128	10	
736-745	Male	240	140	10	10
746-755	Female	230	130	10	
756-765	Male	242	142	10	10
766-775	Female	232	132	10	
776-785	Male	244	144	10	10
786-795	Female	234	134	10	
796-805	Male	246	146	10	10
806-815	Female	236	136	10	
816-825	Male	248	148	10	10
826-835	Female	238	138	10	
836-845	Male	250	150	10	10
846-855	Female	240	140	10	
856-865	Male	252	152	10	10
866-875	Female	242	142	10	
876-885	Male	254	154	10	10
886-895	Female	244	144	10	
896-905	Male	256	156	10	10
906-915	Female	246	146	10	
916-925	Male	258	158	10	10
926-935	Female	248	148	10	
936-945	Male	260	160	10	10
946-955	Female	250	150	10	
956-965	Male	262	162	10	10
966-975	Female	252	152	10	
976-985	Male	264	164	10	10
986-995	Female	254	154	10	
996-1005	Male	266	166	10	10
1006-1015	Female	256	156	10	
1016-1025	Male	268	168	10	10
1026-1035	Female	258	158	10	
1036-1045	Male	270	170	10	10
1046-1055	Female	260	160	10	
1056-1065	Male	272	172	10	10
1066-1075	Female	262	162	10	
1076-1085	Male	274	174	10	10
1086-1095	Female	264	164	10	
1096-1105	Male	276	176	10	10
1106-1115	Female	266	166	10	
1116-1125	Male	278	178	10	10
1126-1135	Female	268	168	10	
1136-1145	Male	280	180	10	10
1146-1155	Female	270	170	10	
1156-1165	Male	282	182	10	10
1166-1175	Female	272	172	10	
1176-1185	Male	284	184	10	10
1186-1195	Female	274	174	10	
1196-1205	Male	286	186	10	10
1206-1215	Female	276	176	10	
1216-1225	Male	288	188	10	10
1226-1235	Female	278	178	10	
1236-1245	Male	290	190	10	10
1246-1255	Female	280	180	10	
1256-1265	Male	292	192	10	10
1266-1275	Female	282	182	10	
1276-1285	Male	294	194	10	10
1286-1295	Female	284	184	10	
1296-1305	Male	296	196	10	10
1306-1315	Female	286	186	10	
1316-1325	Male	298	198	10	10
1326-1335	Female	288	188	10	
1336-1345	Male	300	200	10	10
1346-1355	Female	290	190	10	
1356-1365	Male	302	202	10	10
1366-1375	Female	292	192	10	
1376-1385	Male	304	204	10	10
1386-1395	Female	294	194	10	
1396-1405	Male	306	206	10	10
1406-1415	Female	296	196	10	
1416-1425	Male	308	208	10	10
1426-1435	Female	298	198	10	
1436-1445	Male	310	210	10	10
1446-1455	Female	300	200	10	
1456-1465	Male	312	212	10	10
1466-1475	Female	302	202	10	
1476-1485	Male	314	214	10	10
1486-1495	Female	304	204	10	
1496-1505	Male	316	216	10	10
1506-1515	Female	306	206	10	
1516-1525	Male	318	218	10	10
1526-1535	Female	308	208	10	
1536-1545	Male	320	220	10	10
1546-1555	Female	310	210	10	
1556-1565	Male	322	222	10	10
1566-1575	Female	312	212	10	
1576-1585	Male	324	224	10	10
1586-1595	Female	314	214	10	
1596-1605	Male	326	226	10	10
1606-1615	Female	316	216	10	
1616-1625	Male	328	228	10	10
1626-1635	Female	318	218	10	
1636-1645	Male	330	230	10	10
1646-1655	Female	320	220	10	
1656-1665	Male	332	232	10	10
1666-1675	Female	322	222	10	
1676-1685	Male	334	234	10	10
1686-1695	Female	324	224	10	
1696-1705	Male	336	236	10	10
1706-1715	Female	326	226	10	
1716-1725	Male	338	238	10	10
1726-1735	Female	328	228	10	
1736-1745	Male	340	240	10	10
1746-1755	Female	330	230	10	
1756-1765	Male	342	242	10	10
1766-1775	Female	332	232	10	
1776-1785	Male	344	244	10	10
1786-1795	Female	334	234	10	
1796-1805	Male	346	246	10	10
1806-1815	Female	336	236	10	
1816-1825	Male	348	248	10	10
1826-1835	Female	338	238	10	
1836-1845	Male	350	250	10	10
1846-1855	Female	340	240	10	
1856-1865	Male	352	252	10	10
1866-1875	Female	342	242	10	
1876-1885	Male	354	254	10	10
1886-1895	Female	344	244	10	
1896-1905	Male	356	256	10	10
1906-1915	Female	346	246	10	
1916-1925	Male	358	258	10	10
1926-1935	Female	348	248	10	
1936-1945	Male	360	260	10	10
1946-1955	Female	350	250	10	
1956-1965	Male	362	262	10	10
1966-1975	Female	352	252	10	
1976-1985	Male	364	264	10	10
1986-1995	Female	354	254	10	
1996-2005	Male	366	266	10	10
2006-2015	Female	356	256	10	
2016-2025	Male	368	268	10	10
2026-2035	Female	358	258	10	
2036-2045	Male	370	270	10	10
2046-2055	Female	360	260	10	
2056-2065	Male	372	272	10	10
2066-2075	Female	362	262	10	
2076-2085	Male	374	274	10	10
2086-2095	Female	364	264	10	
2096-2105	Male	376	276	10	10
2106-2115	Female	366	266	10	

TABLE XIII

MEANS AND STANDARD DEVIATIONS OF SCORES OBTAINED
ON FIVE VARIABLES BY NURSING FRESHMEN IDENTIFIED
AS SELF-ACTUALIZED OR NON-SELF-ACTUALIZED

Variable	Scale	Number	Mean	Standard Deviation
Nursing Theory	Self-actualized	11	66.36	8.53
	Non-Self-actualized	64	66.60	8.12
Clinical Performance	Self-actualized	11	1.54	0.52
	Non-Self-actualized	64	1.48	0.50
Sociology	Self-actualized	11	76.45	10.47
	Non-Self-actualized	64	68.75	10.81
Psychology	Self-actualized	11	58.00	7.86
	Non-Self-actualized	64	54.73	11.33
Microbiology	Self-actualized	11	58.00	7.86
	Non-Self-actualized	64	54.73	11.33

TABLE XIV

SUMMARY OF ANALYSES OF VARIANCE OF SCORES OBTAINED
ON FIVE VARIABLES BY NURSING FRESHMEN IDENTIFIED
AS SELF-ACTUALIZED OR NON-SELF-ACTUALIZED

Variable	Scale	df	MS	F	p
Nursing Theory	Self-actualized Groups	1	132.31	1.98	0.16
	Non-Self-actualized Error	73	66.98		
Clinical Performance	Self-actualized Groups	1	0.04	0.14	0.71
	Non-Self-actualized Error	73	0.26		
Sociology	Self-actualized Groups	1	557.19	4.81	0.03*
	Non-Self-actualized Error	73	115.96		
Psychology	Self-actualized Groups	1	100.25	0.84	0.36
	Non-Self-actualized Error	73	119.43		
Microbiology	Self-actualized Groups	1	4.31	0.05	0.83
	Non-Self-actualized Error	73	88.47		

* Nursing students identified as self-actualized obtained significantly higher marks in Sociology.

obtained in Nursing Theory, Clinical Performance, Psychology, and Microbiology.

Analysis of variance indicates a difference was obtained between the two groups on the dimension of achievement in a Sociology course. As presented in Table XIV, significantly higher scores were obtained in Sociology by those identified as self-actualized. Part C of Hypothesis VII was, therefore, rejected at the 0.03 level of confidence.

CHAPTER VI

SUMMARY OF FINDINGS, DISCUSSION, AND IMPLICATIONS

The present investigation was designed to measure the personality constructs of need level and perceptual preference among a group of nursing freshmen. These findings were related to academic and clinical performance variables. Based on the theory proposed by Mogar (1969), the dimensions of need level and perceptual preference are believed to influence the effectiveness of a particular educational approach for an individual or group. This chapter consists of a summary and discussion of the findings of the present study, and a review of implications for nursing education.

Summary and Discussion

The investigation of personality type revealed that the nursing students displayed a definite preference for the modes of Feeling and Judging, as measured by the Myers-Briggs Type Indicator (MBTI). They differed from the normative group of liberal arts freshmen in obtaining significantly lower Intuition and Introversion scores versus Sensing and Extroversion scores, respectively. Nursing students also differed from the normative group in preferring Perception to Judging; both groups, however, preferred the Feeling mode of judging. Although the nursing students were almost equally divided in preferring both the Sensing and Intuition modes of perceiving on a measure of frequency, in comparison with

the normative population the main personality type of the nursing students was that of Extroversion-Feeling-Sensing-Judging (EFSJ). Similarly, the predominant personality type of the liberal arts group was that of Extroversion-Feeling-Intuition-Perceiving (EFNP). The nursing students differed from the normative population in their preference for Extroversion versus Introversion, in preferring to use the Sensing mode of perception, and in their overall preference for Judging versus Perception.

The pattern of scores obtained by the nursing group is most representative of individuals with an EFSJ personality type, and Myers (1962), has described the characteristics which were predominant among the freshmen nursing students:

The Feeling Extrovert is concerned chiefly with people, and is at her best in jobs that deal with people. She values harmonious human contacts and is friendly, outgoing, tactful, and sympathetic. Because she gets security from other's warmth of feeling, she is willing to conform within reasonable limits, and is loyal to a respected person, institution, or cause. Combined with a Judging preference, the individual likes to have matters decided or settled, but does not always need or want to settle them herself. She is persevering, conscientious, orderly even in small matters, and inclined to insist that others be the same...the Feeling Extrovert, combined with a Sensing preference, perceives realities; is practical, realistic, matter-of-fact, and concerned with the here and now. This person likes to base plans and decisions upon known facts, rather than upon possibilities. Interested in material possessions and details of direct experience, the individual usually adapts well to routine (p. 3A).

The above description of the personality traits found in this group of nursing students is generally not surprising; many of the characteristics have been previously defined by researchers using other instruments. For example, the Feeling preference correlates with a high need for nurturance, which has been found typical of

those in the health professions. Extroversion is characteristic of individuals who are interested in and enjoy working with people. Also, a need for order and endurance has been found to be characteristic of nurses, and this correlates with a preference for Judging. The Judging individual is described as thorough, responsible, dependable, works steadily, completes undertakings, and is good on details (p. 38). The accent on the practical, the realistic, and upon known facts may be related to a rather unquestioning and uncritical attitude.

Along the same line, it may be informative to note briefly the characteristics of individuals with personality types different from those of the nursing students. The nursing group obtained significantly lower scores on the Intuition scale than the normative group, preferring the Sensing mode of perception. Myers (1962), describes the intuitive individual as deep, showing originality, imaginative, analytical, good at grasping the abstract, and independent. The nursing group also showed a definite preference for Extroversion versus Introversion. Jung (1923), states that the introvert's main interests are in the inner world of concepts and ideas, while the extrovert's main interests are in the outer world of people and things. The preferences opposite to those of Thinking and Perception were chosen by the nursing students. The individual preferring Thinking tends to have a rational, analytical, and questioning attitude. The Perceptive preference, in contrast to the Judging mode, is characterized by a receptive and flexible attitude toward events; the individual tends to delay coming to a conclusion, believing that new developments may occur.

Perhaps it is significant that the above personality traits were not strongly emphasized among the nursing student population. Nursing is a diverse and varied profession, believed to offer an outlet for a wide range of personalities and ability levels. However, the findings of the present study, although admittedly limited in scope, appear to confirm the belief that nursing attracts and consists of individuals with certain commonalities.

On the dimension of self-actualization, as measured by the "inner-directed" scale of the Personal Orientation Inventory (POI), the nursing students scored significantly higher than the female freshmen college students. A comparison of the nursing group with a self-actualized group, however, revealed that the nursing students obtained a significantly lower rating than did those identified as self-actualized. It would appear from this data that, although the nursing group scored higher in self-actualization than did the normative group, they nevertheless were predominantly deficiency-motivated; ie., had not yet reached the need level of self-actualization.

The group was less inner-directed and more other-directed, indicating a tendency toward being more dependent on the views of others than on being self-supportive. These findings are similar to the reported research of Green (1967), and Gunter (1969), who found other groups of nursing students to be non-self-actualized, as measured by the POI. These results are also in agreement with Maslow (1954), who concluded that a level of self-actualization

apparent in older subjects was not possible for young, developing people.

It is interesting to note that, although relatively non-self-actualized as a group, the nursing students scored significantly higher on this dimension than did a group of female freshmen college students. This would indicate that at this stage in their development, the nursing students are comparatively more mature in their development toward self-actualization than the normative group.

The exploration of personality type in relation to scholastic and clinical achievement variables revealed that students identified as Introverted obtained significantly higher marks in Sociology than those identified as Extroverted. Also, those identified as preferring Judging versus Perception scored significantly higher in Microbiology. These findings are not surprising, as both the Introverted and Judging personality types have previously been found to be related to academic achievement. Although not hypothesized, the findings of the present study appear to provide further validation for the Introversion and Judging scales of the MBTI as predictors of academic achievement.

Myers (1962), states that there is a relationship between a preference for Judging and the ability to apply oneself to a task. She found that students with this preference obtain higher grades in subjects requiring application, even though they may have a low aptitude for the course. Faculty ratings of student characteristics which correlated highly with Judging preference, included such terms as thorough, good on details, responsible, and

works steadily (p. 38). In view of the above description of the individual with a Judging preference, it is not surprising that nursing students identified as such obtained significantly higher marks in a course which requires much application and memorization, Microbiology.

Myers also states that the Introversion preference is characteristic of individuals who use their minds in a way that is advantageous for dealing with the intricacies of language and thought. "Introversion produces a habit of mind which results in a characteristic level of interest in activities often associated with academic work" (p. 13). This is consistent with the finding that significantly higher scores in Sociology, a course which is relatively abstract and speculative, were obtained by nursing students who were identified as introverted.

The above findings indicate that the nursing students have a tendency to do better academically in subjects dealing with the concrete, that is, with factual content, than in subjects of an abstract nature.

In relating the personality dimension of self-actualization to nursing achievement, students identified as self-actualized obtained significantly higher marks than those not so identified, in only one course, Sociology. It is interesting to note that this is the same course in which those identified as Introverted obtained higher marks. These findings could possibly be explained by the format or orientation of the Sociology course, the method of evaluation, and/or the values held by the professor.

Despite the above findings, it may be concluded that level

of self-actualization and personality type of the nursing students were not significant factors in the students' achievement on the five variables measured in this study.

In summary, personality characteristics typical of the nursing students were identified. On the dimension of perceptual preference, the group was characterized by the Extroversion-Feeling-Sensing-Judging personality type. On the dimension of need level, the group was found to be predominantly non-self-actualized; or at the need level described by Maslow as deficiency-motivated. The measures of personality employed in this study failed to contribute significantly to an overall prediction of academic and clinical performance.

Implications for Practice and Research

In keeping with the goals of nursing to provide more personal and individual care, educators are continually evaluating and modifying educational methods used. The need for nursing programs which allow for individual differences in emotional development, as well as cognitive learning, is increasingly recognized.

It is relatively acknowledged that current educational practices focus upon cognitive learning, or the acquisition of knowledge. However, educators are increasingly emphasizing that significant learning involves the whole person-his feelings, self-concept, values and beliefs, as well as cognitive abilities (Mogar, 1969, p. 38). The views expressed by Mogar support the growing interest within nursing to provide both cognitive and experiential learning experiences. An aim of experiential learning is to nurture the process of discovery, and to foster

personal involvement in a process of change. Both cognitive and experiential learning are considered necessary for personal growth or maturity, which is closely related to the quality of patient care a nurse is able to provide.

Knowledge regarding the characteristics of nursing students can provide a foundation for implementing educational procedures which facilitate personal growth. The present study of perceptual preferences and need level among nursing students identified a personality pattern characteristic of the subjects, and found the group to be predominantly non-self-actualized. As defined by Mogar, this information would indicate that the students' receptiveness to education would be enhanced if educational methods congruent with their individual needs were employed. The Congruity approach to education proposed by Mogar is most effective for those who are at a need level below that of self-actualization. In this approach, educational techniques most compatible with the individual's life style are used. For example, the findings of this study indicated that methods such as group work, role playing, and communication exercises would enhance the experiential learning process for this particular group of students.

The personalized educational methods recommended could foster a trend to self-directedness which has wide implications for the nursing profession. A feature of traditional nursing has been that of other-directedness; that is, being guided largely by beliefs, actions, and norms of the medical profession. Leininger, a social anthropologist, described the nursing profession as a "closed system", and defined such a system as a group of people

who do not tend to facilitate, encourage, or accept new members, ideas, and practices (1970). Similarly, Sawatzky (1968), described the personality characteristic of "openness" as involving an acceptant attitude toward other people:

Openness also implies a greater awareness of reality. An open-minded individual should be more aware of reality as it exists outside of himself, instead of perceiving it in preconceived categories. He should be better able to see each new person as he is rather than attempt to fit him into a stereotyped pattern (p. 26).

Allen and Whitely (1968), also studied "psychological openness" or the degree to which a person can accept new information, and found nurses to be relatively uncritical, and with a tendency to organize stimuli into narrow categories. It is perhaps significant that the present study revealed the nursing students as oriented to the practical and factual, with a tendency to early closure in decision-making, rather than an openness to possibilities.

Despite these findings, nurses are increasingly portraying assertive behavior which reveals autonomy in thinking and behavior. This behavior could be fostered by experiential learning, as an important goal of this learning involves aiding the learner to be receptive and open to experience. It is possible that nursing educators could purposefully support a trend to open-mindedness in nursing students by the educational methods they choose.

Although educational methods contribute importantly to the impact of an educational process on an individual, the growing interest in the personal growth of the student also necessitates a reexamination of the role of the educator. There is considerable evidence that similarity between the teacher's and student's

characteristics of personality, interests, and values facilitates experiential learning and personal growth (Redman, 1966; Goldstein, 1966; Frank, 1961). Mogar writes that experiential learning includes a working emotional relationship with at least one other person. Therefore, the teacher's level of maturity, personality characteristics, and capacity for empathic understanding are important factors in the learning process (p. 39).

68.

If the characteristics of open-mindedness, assertiveness, and autonomy are considered valid behavioral goals for nursing students, the role of the nursing educator may be seen to be considerably broadened. As well as aiding the student in knowledge acquisition, her role would also include the facilitation of personal growth. Further research into the role of the nursing educator, her personality characteristics, values, and attitudes could contribute to providing additional direction in nursing education.

As well as guiding educational approaches, information regarding student characteristics might aid selection procedures. These procedures could be chosen following a closer look at the requirements and goals of nursing. Since the findings of this study indicate that individuals with a similar personality pattern enter nursing, an effort may be made to admit students with a variety of characteristics. For example, in order to stimulate creativity and promote leadership in nursing, individuals with a more receptive, questioning, and open-minded attitude should be encouraged to enter the field. These attitudes have been found to be representative of individuals

with high needs for autonomy and achievement, and were characteristic of those employed in the "professions", for example, medicine (Myers, 1962), but not characteristic of nurses. As well, examining self-actualization as a concept of personal maturity might contribute to selection procedures. Scores obtained on the "inner-directed" scale of the POI could provide an approximate indication of the level of maturity of a prospective student.

It has been suggested, based on Mogar's theory of education, that individualized educational methods would enhance the student's receptiveness to a nursing program and facilitate personal growth. A closer examination of various educational methods used, in relation to nursing performance and personal growth, could provide additional information.

Another area open to investigation is the continuation of determining factors correlating with clinical performance. The present study found personality characteristics to be insignificantly related to the calibre of nursing care given by the students. This finding indicates a need for further examination of the criteria on which clinical performance grades are assigned.

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A P P E N D I C E S

APPENDIX A

PERSONAL ORIENTATION INVENTORY

EVERETT L. SHOSTROM, Ph.D.

DIRECTIONS

This inventory consists of pairs of numbered statements. Read each statement and decide which of the two paired statements most consistently applies to you.

You are to mark your answers on the answer sheet you have. Look at the example of the answer sheet shown at the right. If the first statement of the pair is TRUE or MOSTLY TRUE as applied to you, blacken between the lines in the column headed "a". (See Example Item 1 at right.) If the second statement of the pair is TRUE or MOSTLY TRUE as applied to you, blacken between the lines in the column headed "b". (See Example Item 2 at right.) If neither statement applies to you, or if they refer to something you don't know about, make no answer on the answer sheet. Remember to give YOUR OWN opinion of yourself and do not leave any blank spaces if you can avoid it.

Section of Answer
Column Correctly
Marked

	a	b
1.	a	b
2.		

In marking your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet. Make your marks heavy and black. Erase completely any answer you wish to change. Do not make any marks in this booklet.

Remember, try to make some answer to every statement.

Before you begin the inventory, be sure you put your name, your sex, your age, and the other information called for in the space provided on the answer sheet.

NOW OPEN THE BOOKLET AND START WITH QUESTION 1.

1. a. I am bound by the principle of fairness.
b. I am not absolutely bound by the principle of fairness.
2. a. When a friend does me a favor, I feel that I must return it.
b. When a friend does me a favor, I do not feel that I must return it.
3. a. I feel I must always tell the truth.
b. I do not always tell the truth.
4. a. No matter how hard I try, my feelings are often hurt.
b. If I manage the situation right, I can avoid being hurt.
5. a. I feel that I must strive for perfection in everything that I undertake.
b. I do not feel that I must strive for perfection in everything that I undertake.
6. a. I often make my decisions spontaneously.
b. I seldom make my decisions spontaneously.
7. a. I am afraid to be myself.
b. I am not afraid to be myself.
8. a. I feel obligated when a stranger does me a favor.
b. I do not feel obligated when a stranger does me a favor.
9. a. I feel that I have a right to expect others to do what I want of them.
b. I do not feel that I have a right to expect others to do what I want of them.
10. a. I live by values which are in agreement with others.
b. I live by values which are primarily based on my own feelings.
11. a. I am concerned with self-improvement at all times.
b. I am not concerned with self-improvement at all times.
12. a. I feel guilty when I am selfish.
b. I don't feel guilty when I am selfish.
13. a. I have no objection to getting angry.
b. Anger is something I try to avoid.
14. a. For me, anything is possible if I believe in myself.
b. I have a lot of natural limitations even though I believe in myself.
15. a. I put others' interests before my own.
b. I do not put others' interests before my own.
16. a. I sometimes feel embarrassed by compliments.
b. I am not embarrassed by compliments.

17. a. I believe it is important to accept others as they are.
b. I believe it is important to understand why others are as they are.
18. a. I can put off until tomorrow what I ought to do today.
b. I don't put off until tomorrow what I ought to do today.
19. a. I can give without requiring the other person to appreciate what I give.
b. I have a right to expect the other person to appreciate what I give.
20. a. My moral values are dictated by society.
b. My moral values are self-determined.
21. a. I do what others expect of me.
b. I feel free to not do what others expect of me.
22. a. I accept my weaknesses.
b. I don't accept my weaknesses.
23. a. In order to grow emotionally, it is necessary to know why I act as I do.
b. In order to grow emotionally, it is not necessary to know why I act as I do.
24. a. Sometimes I am cross when I am not feeling well.
b. I am hardly ever cross.
25. a. It is necessary that others approve of what I do.
b. It is not always necessary that others approve of what I do.
26. a. I am afraid of making mistakes.
b. I am not afraid of making mistakes.
27. a. I trust the decisions I make spontaneously.
b. I do not trust the decisions I make spontaneously.
28. a. My feelings of self-worth depend on how much I accomplish.
b. My feelings of self-worth do not depend on how much I accomplish.
29. a. I fear failure.
b. I don't fear failure.
30. a. My moral values are determined, for the most part, by the thoughts, feelings and decisions of others.
b. My moral values are not determined, for the most part, by thoughts, feelings and decisions of others.
31. a. It is possible to live life in terms of what I want to do.
b. It is not possible to live life in terms of what I want to do.

32. a. I can cope with the ups and downs of life.
b. I cannot cope with the ups and downs of life.
33. a. I believe in saying what I feel in dealing with others.
b. I do not believe in saying what I feel in dealing with others.
34. a. Children should realize that they do not have the same rights and privileges as adults.
b. It is not important to make an issue of rights and privileges.
35. a. I can "stick my neck out" in my relations with others.
b. I avoid "sticking my neck out" in my relations with others.
36. a. I believe the pursuit of self-interest is opposed to interest in others.
b. I believe the pursuit of self-interest is not opposed to interest in others.
37. a. I find that I have rejected many of the moral values I was taught.
b. I have not rejected any of the moral values I was taught.
38. a. I live in terms of my wants, likes, dislikes and values.
b. I do not live in terms of my wants, likes, dislikes, and values.
39. a. I trust my ability to size up a situation.
b. I do not trust my ability to size up a situation.
40. a. I believe I have an innate capacity to cope with life.
b. I do not believe I have an innate capacity to cope with life.
41. a. I must justify my actions in the pursuit of my own interests.
b. I need not justify my actions in the pursuit of my own interests.
42. a. I am bothered by fears of being inadequate.
b. I am not bothered by fears of being inadequate.
43. a. I believe that man is essentially good and can be trusted.
b. I believe that man is essentially evil and cannot be trusted.
44. a. I live by the rules and standards of society.
b. I do not always need to live by the rules and standards of society.
45. a. I am bound by my duties and obligations to others.
b. I am not bound by my duties and obligations to others.
46. a. Reasons are needed to justify my feelings.
b. Reasons are not needed to justify my feelings.

47. a. There are times when just being silent is the best way I can express my feelings.
b. I find it difficult to express my feelings by just being silent.
48. a. I often feel it necessary to defend my past actions.
b. I do not feel it necessary to defend my past actions.
49. a. I like everyone I know.
b. I do not like everyone I know.
50. a. Criticism threatens my self-esteem.
b. Criticism does not threaten my self-esteem.
51. a. I believe that knowledge of what is right makes people act right.
b. I do not believe that knowledge of what is right necessarily makes people act right.
52. a. I am afraid to be angry at those I love.
b. I feel free to be angry at those I love.
53. a. My basic responsibility is to be aware of my own needs.
b. My basic responsibility is to be aware of others' needs.
54. a. Impressing others is most important.
b. Expressing myself is most important.
55. a. To feel right, I need always to please others.
b. I can feel right without always having to please others.
56. a. I will risk a friendship in order to say or do what I believe is right.
b. I will not risk a friendship just to say or do what is right.
57. a. I feel bound to keep the promises I make.
b. I do not always feel bound to keep the promises I make.
58. a. I must avoid sorrow at all costs.
b. It is not necessary for me to avoid sorrow.
59. a. I strive always to predict what will happen in the future.
b. I do not feel it necessary always to predict what will happen in the future.
60. a. It is important that others accept my point of view.
b. It is not necessary for others to accept my point of view.
61. a. I only feel free to express warm feelings to my friends.
b. I feel free to express both warm and hostile feelings to my friends.

62. a. There are many times when it is more important to express feelings than to carefully evaluate the situation.
b. There are very few times when it is more important to express feelings than to carefully evaluate the situation.
63. a. I welcome criticism as an opportunity for growth.
b. I do not welcome criticism as an opportunity for growth.
64. a. I hardly ever gossip.
b. I gossip a little at times.
65. a. Appearances are all-important.
b. Appearances are not terribly important.
66. a. I feel free to reveal my weaknesses among friends.
b. I do not feel free to reveal my weaknesses among friends.
67. a. I should always assume responsibility for other people's feelings.
b. I need not always assume responsibility for other people's feelings.
68. a. I feel free to be myself and bear the consequences.
b. I do not feel free to be myself and bear the consequences.
69. a. I already know all I need to know about my feelings.
b. As life goes on, I continue to know more and more about my feelings.
70. a. I hesitate to show my weaknesses among strangers.
b. I do not hesitate to show my weaknesses among strangers.
71. a. I will continue to grow only by setting my sights on a high-level, socially approved goal.
b. I will continue to grow best by being myself.
72. a. I accept inconsistencies within myself.
b. I cannot accept inconsistencies within myself.
73. a. Man is naturally cooperative.
b. Man is naturally antagonistic.
74. a. I don't mind laughing at a dirty joke.
b. I hardly ever laugh at a dirty joke.
75. a. Happiness is a by-product in human relationships.
b. Happiness is an end in human relationships.
76. a. I only feel free to show friendly feelings to strangers.
b. I feel free to show both friendly and unfriendly feelings to strangers.

77. a. I try to be sincere but I sometimes fail.
b. I try to be sincere and I am sincere.
78. a. Self-interest is natural.
b. Self-interest is unnatural.
79. a. A neutral party can measure a happy relationship by observation.
b. A neutral party cannot measure a happy relationship by observation.
80. a. For me, work and play are the same.
b. For me, work and play are opposites.
81. a. Two people will get along best if each concentrates on pleasing the other.
b. Two people can get along best if each person feels free to express himself.
82. a. I have feelings of resentment about things that are past.
b. I do not have feelings of resentment about things that are past.
83. a. I like only masculine men and feminine women.
b. I like men and women who show masculinity as well as femininity.
84. a. I actively attempt to avoid embarrassment whenever I can.
b. I do not actively attempt to avoid embarrassment.
85. a. I blame my parents for a lot of my troubles.
b. I do not blame my parents for my troubles.
86. a. I feel that a person should be silly only at the right time and place.
b. I can be silly when I feel like it.
87. a. People should always repent their wrong-doings.
b. People need not always repent their wrong-doings.
88. a. I worry about the future.
b. I do not worry about the future.
89. a. Kindness and ruthlessness must be opposites.
b. Kindness and ruthlessness need not be opposites.
90. a. I prefer to save good things for future use.
b. I prefer to use good things now.
91. a. People should always control their anger.
b. People should express honestly-felt anger.

92. a. The truly spiritual man is sometimes sensual.
b. The truly spiritual man is never sensual.
93. a. I am able to express my feelings even when they sometimes result in undesirable consequences.
b. I am unable to express my feelings if they are likely to result in undesirable consequences.
94. a. I am often ashamed of some of the emotions that I feel bubbling up within me.
b. I do not feel ashamed of my emotions.
95. a. I have had mysterious or ecstatic experiences.
b. I have never had mysterious or ecstatic experiences.
96. a. I am orthodoxly religious.
b. I am not orthodoxly religious.
97. a. I am completely free of guilt.
b. I am not free of guilt.
98. a. I have a problem in fusing sex and love.
b. I have no problem in fusing sex and love.
99. a. I enjoy detachment and privacy.
b. I do not enjoy detachment and privacy.
100. a. I feel dedicated to my work.
b. I do not feel dedicated to my work.
101. a. I can express affection regardless of whether it is returned.
b. I cannot express affection unless I am sure it will be returned.
102. a. Living for the future is as important as living for the moment.
b. Only living for the moment is important.
103. a. It is better to be yourself.
b. It is better to be popular.
104. a. Wishing and imagining can be bad.
b. Wishing and imagining are always good.
105. a. I spend more time preparing to live.
b. I spend more time actually living.
106. a. I am loved because I give love.
b. I am loved because I am lovable.

GO ON TO THE NEXT PAGE

107. a. When I really love myself, everybody will love me.
b. When I really love myself, there will still be those who won't love me.
108. a. I can let other people control me.
b. I can let other people control me if I am sure they will not continue to control me.
109. a. As they are, people sometimes annoy me.
b. As they are, people do not annoy me.
110. a. Living for the future gives my life its primary meaning.
b. Only when living for the future ties into living for the present does my life have meaning.
111. a. I follow diligently the motto, "Don't waste your time."
b. I do not feel bound by the motto, "Don't waste your time."
112. a. What I have been in the past dictates the kind of person I will be.
b. What I have been in the past does not necessarily dictate the kind of person I will be.
113. a. It is important to me how I live in the here and now.
b. It is of little importance to me how I live in the here and now.
114. a. I have had an experience where life seemed just perfect.
b. I have never had an experience where life seemed just perfect.
115. a. Evil is the result of frustration in trying to be good.
b. Evil is an intrinsic part of human nature which fights good.
116. a. A person can completely change his essential nature.
b. A person can never change his essential nature.
117. a. I am afraid to be tender.
b. I am not afraid to be tender.
118. a. I am assertive and affirming.
b. I am not assertive and affirming.
119. a. Women should be trusting and yielding.
b. Women should not be trusting and yielding.
120. a. I see myself as others see me.
b. I do not see myself as others see me.
121. a. It is a good idea to think about your greatest potential.
b. A person who thinks about his greatest potential gets conceited.

122. a. Men should be assertive and affirming.
b. Men should not be assertive and affirming.
123. a. I am able to risk being myself.
b. I am not able to risk being myself.
124. a. I feel the need to be doing something significant all of the time.
b. I do not feel the need to be doing something significant all of the time.
125. a. I suffer from memories.
b. I do not suffer from memories.
126. a. Men and women must be both yielding and assertive.
b. Men and women must not be both yielding and assertive.
127. a. I like to participate actively in intense discussions.
b. I do not like to participate actively in intense discussions.
128. a. I am self-sufficient.
b. I am not self-sufficient.
129. a. I like to withdraw from others for extended periods of time.
b. I do not like to withdraw from others for extended periods of time.
130. a. I always play fair.
b. Sometimes I cheat a little.
131. a. Sometimes I feel so angry I want to destroy or hurt others.
b. I never feel so angry that I want to destroy or hurt others.
132. a. I feel certain and secure in my relationships with others.
b. I feel uncertain and insecure in my relationships with others.
133. a. I like to withdraw temporarily from others.
b. I do not like to withdraw temporarily from others.
134. a. I can accept my mistakes.
b. I cannot accept my mistakes.
135. a. I find some people who are stupid and uninteresting.
b. I never find any people who are stupid and uninteresting.
136. a. I regret my past.
b. I do not regret my past.
137. a. Being myself is helpful to others.
b. Just being myself is not helpful to others.

138. a. I have had moments of intense happiness when I felt like I was experiencing a kind of ecstasy or bliss.
b. I have not had moments of intense happiness when I felt like I was experiencing a kind of bliss.
139. a. People have an instinct for evil.
b. People do not have an instinct for evil.
140. a. For me, the future usually seems hopeful.
b. For me, the future often seems hopeless.
141. a. People are both good and evil.
b. People are not both good and evil.
142. a. My past is a stepping stone for the future.
b. My past is a handicap to my future.
143. a. "Killing time" is a problem for me.
b. "Killing time" is not a problem for me.
144. a. For me, past, present and future is in meaningful continuity.
b. For me, the present is an island, unrelated to the past and future.
145. a. My hope for the future depends on having friends.
b. My hope for the future does not depend on having friends.
146. a. I can like people without having to approve of them.
b. I cannot like people unless I also approve of them.
147. a. People are basically good.
b. People are not basically good.
148. a. Honesty is always the best policy.
b. There are times when honesty is not the best policy.
149. a. I can feel comfortable with less than a perfect performance.
b. I feel uncomfortable with anything less than a perfect performance.
150. a. I can overcome any obstacles as long as I believe in myself.
b. I cannot overcome every obstacle even if I believe in myself.

APPENDIX B

MYERS-BRIGGS TYPE INDICATOR

Form F

READ THESE DIRECTIONS FIRST:

1. This is a test to show which sides of your personality you have developed the most.
2. The answer you choose to any question is neither "right" nor "wrong." It simply helps to point out what type of person you are, and therefore where your special strengths lie and what sort of work you will like to do.
3. For each question, choose the answer which comes closest to how you usually feel or act. Mark your choice on the separate answer sheet, as shown here.

Sample Question	Sample Answer Sheet	
167. Are your interests	A	B
(A) few and lasting	167.	
(B) varied		

If your interests are varied, you would mark answer "B" as it is marked on the sample answer sheet. If they are few and lasting you would mark "A."

4. If you find a question where you cannot choose, don't mark both answers. Just skip the question and go on.

NOW TAKE YOUR ANSWER SHEET

5. Fill in all facts called for at the top of the answer sheet.

THEN START WITH QUESTION 1 AND WORK STRAIGHT THROUGH TO THE END OF THE TEST WITHOUT STOPPING

1. Does following a schedule
 - (A) appeal to you
 - (B) cramp you
2. Do you usually get on better with
 - (A) imaginative people
 - (B) realistic people
3. If strangers are staring at you in a crowd, do you
 - (A) often become aware of it
 - (B) seldom notice it
4. Are you more careful about
 - (A) people's feelings
 - (B) their rights
5. Are you
 - (A) inclined to enjoy deciding things
 - (B) just as glad to have circumstances decide a matter for you
6. As a guest, do you more enjoy
 - (A) joining in the talk of the group
 - (B) talking separately with people you know well
7. When you have more knowledge or skill in something than the people around you, is it more satisfying
 - (A) to guard your superior knowledge
 - (B) to share it with those who want to learn
8. When you have done all you can to remedy a troublesome situation, are you
 - (A) able to stop worrying about it
 - (B) still more or less haunted by it
9. If you were asked on a Saturday morning what you were going to do that day, would you
 - (A) be able to tell pretty well
 - (B) list twice as many things to do as any day can hold
 - (C) have to wait and see
10. Do you think on the whole that
 - (A) children have the best of it
 - (B) life is more interesting for grown-ups
11. In doing something which many other people do, does it appeal more to you
 - (A) to do it in the accepted way
 - (B) to invent a way of your own

12. When you were small, did you
 (A) feel sure of your parents' love and devotion to you
 (B) feel that they admired and approved of some other child more than they did of you
13. Do you
 (A) rather prefer to do things at the last minute
 (B) find it hard on the nerves
14. If a breakdown or mix-up halted a job on which you and a lot of others were working, would your impulse be
 (A) to enjoy the breathing spell
 (B) to look for some part of the work where you could still make progress
 (C) to join the "trouble-shooters" who were wrestling with the difficulty
15. Do you
 (A) show your feelings freely as you go along
 (B) keep them to yourself
16. When you have decided upon a course of action, do you
 (A) reconsider it if unforeseen disadvantages are pointed out to you
 (B) usually put it through to a finish, however it may inconvenience yourself and others
17. In reading for pleasure, do you
 (A) enjoy odd or original ways of saying things
 (B) wish writers would say exactly what they mean
18. In any of the ordinary emergencies of life (not matters of life or death), do you prefer
 (A) to take orders and be helpful
 (B) to give orders and be responsible
19. At parties, do you
 (A) sometimes get bored
 (B) always have fun
20. Is it harder for you to adapt to
 (A) routine
 (B) constant change
21. Would you be more willing to take on a heavy load of extra work for the sake of
 (A) additional comforts and luxuries
 (B) the chance of becoming famous through your work
22. Are the things you plan or undertake
 (A) almost always things you can finish
 (B) frequently things that prove too difficult to carry through

23. Are you more attracted
(A) to a person with a quick and brilliant mind
(B) to a practical person with a lot of horse sense
24. Do you find people in general
(A) slow to appreciate and accept ideas not their own
(B) reasonably open-minded
25. When you have to meet strangers, do you find it
(A) pleasant, or at least easy
(B) something that takes a good deal of effort
26. Are you inclined
(A) to value sentiment above logic
(B) to value logic above sentiment
27. Do you like
(A) to arrange your dates and parties some distance ahead
(B) to be free to do whatever looks like fun at the time
28. In making plans which concern other people, do you prefer
(A) to take them into your confidence
(B) to keep them in the dark till the last possible moment
29. Which of these two is the higher compliment
(A) he is a person of real feeling
(B) he is consistently reasonable
30. When you have to make up your mind about something, do you like to
(A) do it right away
(B) postpone the decision as long as you reasonably can
31. When you run into an unexpected difficulty in something you are doing, do you feel it to be
(A) a piece of bad luck
(B) a nuisance
(C) all in the day's work
32. Do you almost always
(A) enjoy the present moment and make the most of it
(B) feel that something just ahead is more important
33. Are you
(A) easy to get to know
(B) hard to get to know
34. With most of the people you know, do you
(A) feel that they mean what they say
(B) feel you must watch for a hidden meaning
35. When you start a big project that is due in a week, do you
(A) take time to list the separate things to be done in the order of doing them
(B) plunge in

36. In solving a personal problem, do you
(A) feel more confident about it if you have asked other people's advice
(B) feel that nobody else is in as good a position to judge as you are
37. Do you admire more the person who is
(A) conventional enough never to make himself conspicuous
(B) too original and individual to care whether he is conspicuous or not
38. Which mistake would be more natural for you
(A) to drift from one thing to another all your life
(B) to stay in a rut that didn't suit you
39. When you run across people who are mistaken in their beliefs, do you feel that
(A) it is your duty to set them right
(B) it is their privilege to be wrong
40. When an attractive chance for leadership comes to you, do you
(A) accept it if it is something you can really swing
(B) sometimes let it slip because you are too modest about your own abilities
(C) or doesn't leadership ever attract you
41. In your crowd, are you
(A) one of the last to hear what is going on
(B) full of news about everybody
42. Are you at your best
(A) when dealing with the unexpected
(B) when following a carefully worked-out plan
43. Does the importance of doing well on a test make it generally
(A) easier for you to concentrate and do your best
(B) harder for you to concentrate and do yourself justice
44. In your free hours, do you
(A) very much enjoy stopping somewhere for refreshments
(B) usually want to use the time and money another way
45. At the time in your life when things piled up on you the worst, did you find
(A) that you had got into an impossible situation
(B) that by doing only the necessary things you could work your way out
46. Do most of the people you know
(A) take their fair share of praise and blame
(B) grab all the credit they can but shift any blame onto someone else

47. When you are in an embarrassing spot, do you usually
(A) change the subject
(B) turn it into a joke
(C) days later, think of what you should have said
48. Are such emotional "ups and downs" as you may feel
(A) very marked
(B) rather moderate
49. Do you think that having a daily routine is
(A) a comfortable way of getting things done
(B) painful even when necessary
50. Are you naturally
(A) a "good mixer"
(B) rather quiet and reserved in company
51. In your early childhood (at six or eight), did you
(A) feel your parents were very wise people who should be obeyed
(B) find their authority irksome and escape it when possible
52. When you have a suggestion that ought to be made at a meeting, do you
(A) stand up and make it as a matter of course
(B) hesitate to do so
53. Do you get more annoyed at
(A) fancy theories
(B) people who don't like theories
54. When helping in a group undertaking, are you more often struck by
(A) the inspiring quality of shoulder to shoulder cooperation
(B) the annoying inefficiency of loosely organized group work
(C) or don't you get involved in group undertakings
55. When you go somewhere for the day, would you rather
(A) plan what you will do and when
(B) just go
56. Are the things you worry about
(A) often really not worth it
(B) always more or less serious
57. In making an important decision on a given set of facts, do you
(A) find you can trust your feeling judgments
(B) need to set feeling aside and rely on analysis and cold logic
58. In the matter of friends, do you tend to seek
(A) deep friendship with a very few people
(B) broad friendship with many different people

59. Do you think your friends
(A) feel you are open to suggestions
(B) know better than to try to talk you out of anything you've decided to do
60. Does the idea of making a list of what you should get done over a week-end
(A) appeal to you
(B) leave you cold
(C) positively depress you
61. In traveling, would you rather go
(A) with a companion who had made the trip before and "knew the ropes"
(B) alone or with someone greener at it than yourself
62. Which of these two reasons for doing a thing sounds more attractive to you
(A) this is an opportunity that may lead to bigger things
(B) this is an experience that you are sure to enjoy
63. In your personal beliefs, do you
(A) cherish faith in things which cannot be proved
(B) believe only those things which can be proved
64. Would you rather
(A) support the established methods of doing good
(B) analyze what is still wrong and attack unsolved problems
65. Has it been your experience that you
(A) frequently fall in love with a notion or project which turns out to be a disappointment, so that you "go up like a rocket and come down like the stick"
(B) use enough judgment on your enthusiasms so that they do not let you down
66. Would you judge yourself to be
(A) more enthusiastic than the average person
(B) less excitable than the average person
67. If you divided all the people you know into those you like, those you dislike, and those toward whom you feel indifferent, would there be more of
(A) those you like
(B) those you dislike
68. In your daily work, do you (for this item only, if two are true mark both)
(A) rather enjoy an emergency that makes you work against time
(B) hate to work under pressure
(C) usually plan your work so you won't need to

69. Are you more likely to speak up in

- (A) praise
- (B) blame

70. Is it higher praise to call someone

- (A) a man of vision
- (B) a man of common sense

71. When playing cards, do you enjoy most

- (A) the sociability
- (B) the excitement of winning
- (C) the problem of getting the most out of each hand
- (D) the risk of playing for stakes
- (E) or don't you enjoy playing cards

GO ON TO PART II

PART II

Sample Question	Sample Answer Sheet
Which word appeals to you more? 168. (A) long short (B)	A B 168.

If "long" appeals to you more, you would mark answer "A" as it is marked on the sample answer sheet. If "short" appeals to you more, you would mark "B".

WHICH WORD IN EACH PAIR APPEALS TO YOU MORE?

72. (A)	firm-minded	warm-hearted	(B)
73. (A)	imaginative	matter-of-fact	(B)
74. (A)	systematic	spontaneous	(B)
75. (A)	congenial	effective	(B)
76. (A)	theory	certainty	(B)
77. (A)	party	theater	(B)
78. (A)	build	invent	(B)
79. (A)	analyze	sympathize	(B)
80. (A)	popular	intimate	(B)
81. (A)	benefits	blessings	(B)
82. (A)	casual	correct	(B)
83. (A)	active	intellectual	(B)
84. (A)	uncritical	critical	(B)
85. (A)	scheduled	unplanned	(B)
86. (A)	convincing	touching	(B)
87. (A)	reserved	talkative	(B)
88. (A)	statement	concept	(B)

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89.	(A)	soft	hard	(B)
90.	(A)	production	design	(B)
91.	(A)	forgive	tolerate	(B)
92.	(A)	hearty	quiet	(B)
93.	(A)	who	what	(B)
94.	(A)	impulse	decision	(B)
95.	(A)	speak	write	(B)
96.	(A)	affection	tenderness	(B)
97.	(A)	punctual	leisurely	(B)
98.	(A)	sensible	fascinating	(B)
99.	(A)	changing	permanent	(B)
100.	(A)	determined	devoted	(B)
101.	(A)	system	zest	(B)
102.	(A)	facts	ideas	(B)
103.	(A)	compassion	foresight	(B)
104.	(A)	concrete	abstract	(B)
105.	(A)	justice	mercy	(B)
106.	(A)	calm	lively	(B)
107.	(A)	make	create	(B)
108.	(A)	wary	trustful	(B)
109.	(A)	orderly	easy-going	(B)
110.	(A)	approve	question	(B)
111.	(A)	gentle	firm	(B)
112.	(A)	foundation	spire	(B)
113.	(A)	quick	careful	(B)
114.	(A)	thinking	feeling	(B)

115.	(A)	theory	experience	(B)
116.	(A)	sociable	detached	(B)
117.	(A)	sign	symbol	(B)
118.	(A)	systematic	casual	(B)
119.	(A)	literal	figurative	(B)
120.	(A)	peacemaker	judge	(B)
121.	(A)	accept	alter	(B)
122.	(A)	agree	discuss	(B)
123.	(A)	executive	scholar	(B)

GO ON TO PART III

PART III

ANSWER THESE QUESTIONS USING THE DIRECTIONS FOR PART I, ON THE FRONT COVER

124. Do you find the more routine parts of your day
 (A) restful
 (B) boring
125. If you think you are not getting a square deal in a club or team to which you belong, is it better
 (A) to shut up and take it
 (B) to use the threat of resigning if necessary to get your rights
126. Can you
 (A) talk easily to almost anyone for as long as you have to
 (B) find a lot to say only to certain people or under certain conditions
127. When strangers notice you, does it
 (A) make you uncomfortable
 (B) not bother you at all
128. If you were a teacher, would you rather teach
 (A) fact courses
 (B) courses involving theory
129. In your crowd, are you usually
 (A) one of the first to try a new thing
 (B) one of the last to fall into line
130. In solving a difficult personal problem, do you
 (A) tend to do more worrying than is useful in reaching a decision
 (B) feel no more anxiety than the situation requires
131. If people seem to slight you, do you
 (A) tell yourself they didn't mean anything by it
 (B) distrust their good will and stay on guard with them thereafter
132. When there is a special job to be done, do you like
 (A) to organize carefully before you start
 (B) to find out what is necessary as you go along
133. Do you think it is a worse fault
 (A) to show too much warmth
 (B) not to have warmth enough
134. At a party, do you like
 (A) to help get things going
 (B) to let the others have fun in their own way

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135. When a new opportunity comes up, do you
 (A) decide about it fairly quickly
 (B) sometimes miss out through taking too long to make
 up your mind
136. In managing your life, do you tend
 (A) to undertake too much and get into a tight spot
 (B) to hold yourself down to what you can comfortably swing
137. When you find yourself definitely in the wrong, would
 you rather
 (A) admit you are wrong
 (B) not admit it, though everyone knows it
 (C) or don't you ever find yourself in the wrong
138. Can the new people you meet tell what you are interested in
 (A) right away
 (B) only after they really get to know you
139. In your home life, when you come to the end of some undertaking,
 are you
 (A) clear as to what comes next and ready to tackle it
 (B) glad to relax until the next inspiration hits you
140. Do you think it more important to be able
 (A) to see the possibilities in a situation
 (B) to adjust to the facts as they are
141. Would you say that the people you know personally owe their
 successes more to
 (A) ability and hard work
 (B) luck
 (C) bluff, pull, and shoving themselves ahead of others
142. In getting a job done, do you depend on
 (A) starting early, so as to finish with time to spare
 (B) the extra speed you develop at the last minute
143. After associating with superstitious people, have you
 (A) found yourself slightly affected by their superstitions
 (B) remained entirely unaffected
144. When you don't agree with what has just been said, do you
 usually
 (A) let it go
 (B) put up an argument
145. Would you rather be considered
 (A) a practical person
 (B) an ingenious person

146. Out of all the good resolutions you may have made, are there
(A) some you have kept to this day
(B) none that have really lasted
147. Would you rather work under someone who is
(A) always kind
(B) always fair
148. In a large group, do you more often
(A) introduce others
(B) get introduced
149. Would you rather have as a friend someone who
(A) is always coming up with new ideas
(B) has both feet on the ground
150. When you have to do business with strangers do you feel
(A) confident and at ease
(B) a little fussed or afraid that they won't want to bother with you
151. When it is settled well in advance that you will do a certain thing at a certain time, do you find it
(A) nice to be able to plan accordingly
(B) a little unpleasant to be tied down
152. Do you feel that sarcasm
(A) should never be used where it can hurt people's feelings
(B) is too effective a form of speech to be discarded for such a reason
153. When you think of some little thing you should do or buy, do you
(A) often forget it until much later
(B) usually get it down on paper before it escapes you
(C) always carry through on it without reminders
154. Do you more often let
(A) your heart rule your head
(B) your head rule your heart
155. In listening to a new idea, are you more anxious to
(A) find out all about it
(B) judge whether it is right or wrong
156. Are you oppressed by
(A) many different worries
(B) comparatively few
157. When you don't approve of the way a friend is acting, do you
(A) wait and see what happens
(B) do or say something about it

158. Do you think it is a worse fault to be
 (A) unsympathetic
 (B) unreasonable
159. When a new situation comes up which conflicts with your plans, do you try first
 (A) to change your plans
 (B) to change the situation
160. Do you think the people close to you know how you feel
 (A) about most things
 (B) only when you have had some special reason to tell them
161. When you have a serious choice to make, do you
 (A) almost always come to a clear-cut decision
 (B) sometimes find it so hard to decide that you do not whole-heartedly follow up either choice
162. On most matters, do you
 (A) have a pretty definite opinion
 (B) like to keep an open mind
163. As you get to know a person better, do you more often find
 (A) that he lets you down or disappoints you in some way
 (B) that, taken all in all, he improves upon acquaintance
164. When the truth would not be polite, are you more likely to tell
 (A) a polite lie
 (B) the impolite truth
165. In your scheme of living, do you prefer to be
 (A) original
 (B) conventional
166. Would you have liked to argue the meaning of
 (A) a lot of these questions
 (B) only a few

END OF TEST

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